

CALVIN

College



Catalog 2002/2003

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2002–2003

SEPTEMBER 2002

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OCTOBER 2002

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| Important Deadlines for Students | Fall Semester | Spring Semester |
|---|---------------|-----------------|
| Final day to add classes | September 13 | February 7 |
| Final day to change from credit to audit or audit to credit | November 8 | April 11 |
| Final day to drop course | November 8 | April 11 |
| Final day to remove incompletes from the previous semester | October 15 | March 15 |

Academic Calendar

The Fall Semester 2002

| | | | |
|-----------|-------|------------|---|
| September | 4 | Wednesday | Faculty conference |
| | 4 | Wednesday | Residence halls open |
| | 4-7 | Wed – Sat | Orientation and registration |
| | 9 | Monday | First semester classes begin 8:00 a.m. Convocation 9:45-10:45 a.m. |
| October | 29-30 | Tues – Wed | Academic Advising recess |
| | 31 | Thursday | Registration for interim and spring semester begins |
| November | 25 | Monday | Friday class schedule in effect |
| | 27 | Wednesday | Thanksgiving recess begins at 10:00 p.m. |
| December | 2 | Monday | Classes resume 8:00 a.m. |
| | 12 | Thursday | Classes end at 10:00 p.m. |
| | 13 | Friday | Reading recess |
| | 14 | Saturday | Examinations begin 9:00 a.m. |
| | 19 | Thursday | Examinations end and Christmas vacation begins 10:00 p.m. |

The Interim 2003

| | | | |
|---------|----|-----------|-------------------------------|
| January | 8 | Wednesday | Interim term begins 8:00 a.m. |
| | 28 | Tuesday | Interim term ends 5:00 p.m. |

The Spring Semester 2003

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|----------|-------|---------------|--|
| February | 3 | Monday | Spring semester classes begin 8:00 a.m. |
| March | 17-21 | Monday–Friday | Spring break |
| | 24 | Tuesday | Classes begin 8:00 a.m. |
| April | 18 | Friday | Good Friday – no classes – campus closed |
| | 24 | Thursday | Honors Convocation |
| | 29-30 | Tues – Wed | Academic advising recess |
| May | 1 | Thursday | Registration for fall semester begins |
| | 14 | Wednesday | Classes end 10:00 p.m. |
| | 15 | Thursday | Reading Recess |
| | 16 | Friday | Examinations begin at 9:00 a.m. |
| | 21 | Wednesday | Examinations end 10:00 p.m. |
| | 23-24 | Friday - Sat | Commencement activities |
| | 24 | Saturday | Commencement ceremony 3:00 p.m. |

The Summer Sessions 2003

| | | |
|---------------------|--------------|--------------------|
| May 28 - June 17 | Session I - | Three week session |
| May 28 - June 24 | | Four week session |
| June 25 - July 16 | Session II - | Three week session |
| June 25 - July 23 | | Four week session |
| July 24 - August 13 | Session III | Three week session |

Mission of the College

Vision

Calvin College is a comprehensive liberal arts college in the Reformed tradition of historic Christianity. Through our learning, we seek to be agents of renewal in the academy, church, and society. We pledge fidelity to Jesus Christ, offering our hearts and lives to do God's work in God's world.

Purpose

Our primary purpose is to engage in vigorous liberal arts education that promotes lifelong Christian service. We offer education that is shaped by Christian faith, thought, and practice. We study and address a world made good by God, distorted by sin, redeemed in Christ, and awaiting the fullness of God's reign. We aim to develop knowledge, understanding, and critical inquiry; encourage insightful and creative participation in society; and foster thoughtful, passionate, Christian commitments. Our curriculum emphasizes the natural, cultural, societal, and spiritual contexts in which we live; our teaching respects diverse levels, gifts, and styles of learning; and our learning proceeds as a shared intellectual task.

Another purpose is to produce substantial and challenging art and scholarship. We pursue intellectual efforts to explore our world's beauty, speak to its pain, uncover our own faithlessness, and proclaim the healing that God offers in Jesus Christ. We strive to embrace the best insights of Christian life and reflection; engage issues in the intellectual and public spheres; and enrich faith by the heritage of the past and the discoveries of today. Our faculty and staff are committed to keen and lively work in their chosen fields and to sharing its fruits with others.

We are also called to perform all our tasks as a caring and diverse educational community. We undertake our tasks in response to a divine calling. Together, we challenge ourselves to excellence as we acquire knowledge, cultivate aspirations, and practice lives of service. We seek to gather diverse people and gifts around a common pledge and purpose; pursue justice, compassion, and discipline; and provide a training ground for the life of Christian virtue. Our classrooms embody a community of faith and learning extending across campus and beyond.

Commitment

We profess the authority of scripture and the witness of the ecumenical creeds. We affirm the confessions and respect the rich traditions of Reformed believers worldwide and, in particular, those of the Christian Reformed Church. We aim to enhance the cultural life about us and to address local needs. In all we say and do, wherever we may be, we hope to follow and further the ways of God on earth.

Christian Community

Calvin College is a Christian academic community of faculty, students, and staff who come together for the purpose of pursuing liberal arts education in the Reformed Christian tradition. Members of the community experience the common bond of lives committed to Jesus Christ, of relationships guided by biblical principles of love, justice, and righteousness, and of gifts used for God's glory and the furtherance of His kingdom.

A commitment of the community is to seek, nurture, and celebrate cultural and ethnic diversity, in obedience to the biblical vision of the kingdom of God formed 'from every tribe and language and people and nation'. Its members are part of the family of

Christ that transcends ethnic, cultural, racial, gender, and class boundaries; a community in which each member earnestly desires to use his or her gifts for the service and support of the other members. The Calvin community has come together from wide-ranging backgrounds and places. Personal and spiritual maturity is uneven, expectations and goals, diverse. Obviously unanimous agreement by every member on the community's shared commitments is quite impossible. While no one is forced to acknowledge Jesus Christ as Lord, each one who has chosen to join the Calvin community thereby declares he or she is willing not to violate the community's values and commitments. While each member is chiefly accountable to God for his or her own life's pattern, all members also bear responsibility to and for one another in this community. God's infallible Scripture provides a trustworthy guide for our faith and life together. In addition to the explicit teachings of Scripture, which members strive to uphold, the college community also chooses to maintain certain standards of behavior for prudence and good order in our life together.

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 Brèges, 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, and 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 pre-professional 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 now is approximately 4,200.

The curriculum has expanded to include professional training in a variety of fields, but the college maintains a strong commitment to its liberal arts curriculum as a means to develop students' understanding of God's world and their place in it.

Government

The corporate name of the college is Calvin College. It is governed by a single board of trustees, which represents the ecclesiastical geographical districts of the church. The membership of the board is constituted of representatives elected by the various classes, nominations from the alumni association, and by the board of trustees. These are approved by synod. The Board of Trustees meets in October, February, and May. An executive committee 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, age, 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, and the Americans with Disabilities Act of 1990. Instructional and other physical facilities are readily accessible to handicapped students and special rooms in the residence halls are designed for barrier-free living. The Director of Student Academic Services provides advice and support to students with disabilities. Inquiries and appeals regarding compliance with these federal requirements should be directed to the Vice President for Administration and Finance, Calvin College Financial Services 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 is accredited by the Commission on Institutions of Higher Education of the North Central Association of Colleges and Schools. It is also accredited by the American Chemical Society, National Association of Schools of Music, and the National Council for Accreditation of Teacher Education. The Hope-Calvin Nursing Program is accredited by the National League for Nursing and the Michigan Board of Nursing; the Engineering Program is accredited by the Engineering Accreditation Commission of the Accreditation Board for Engineering and Technology (A.B.E.T.); and the Social Work Program is accredited by the Council on Social Work Education. The accreditation documents from these agencies are on file in the Office of the Provost and are available for review in that office upon request.

The College also has membership in a number of professional associations and organizations. 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 Independent Colleges and Universities of Michigan, the National Association of Independent Colleges and Universities, the American Association of Colleges for Teacher Education, the Mathematical Association of America, the Michigan Academy of Sciences, Arts, and Letters, and the American Mathematical Society. It is a member of the Christian College Coalition, Michigan Campus Compact, and is an affiliate member of the American Society of Engineering Education.

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. Students normally take 12–16 semester hours during each of the two semesters and 3–4 semester hours during the interim.

The summer semester offers 3–4 week courses with daytime and evening courses and weeklong graduate workshops. Students can normally complete up to three regular courses during the summer session.

Student Life

Our Mission

*As servants of God and partners in education,
We challenge and support students as they
Seek meaning in their college experiences.*

*With delight and anticipation, we present them to the world
As a people who are learning to love the things that God loves,
So that the world is blessed by their leadership.*

College is a most stimulating, challenging, and exciting experience. Students explore new ideas, develop new skills, wrestle with difficult topics, and establish life-long friendships. The Student Life Division at Calvin College helps students engage these experiences by offering a wide array of programs and services that are consistent with, and complement, the other educational opportunities that abound at Calvin. Simply put, the Student Life Division finds joy in facilitating a rigorous, yet nurturing learning environment in which students can flourish. As our mission states above, we desire students to become different persons between the time they enter Calvin and the time they leave, with the heartfelt hope that both our efforts and students' development honor God and further His kingdom.

The Student Life Division, eager to help students develop their gifts and interests, is made up of seven departments: Broene Counseling Center, Campus Safety, Career Services, Chaplain's Office and Campus Worship, Health Services, Residence Life, and Student Development. With over 60 creative, dedicated staff members, along with commensurate facilities, the SLD is well equipped to serve Calvin students in their holistic development. For more information on the Student Life Division at Calvin College, please visit our website at www.calvin.edu/admin/student_life/. Here are the ways each of these areas are poised to work with you:

Broene Counseling Center

The staff offers evaluation, counseling, and support within a Christian framework to any student dealing with emotional struggles, psychological problems, or personal concerns. Individual and group counseling is available, as are workshops and other special programs. Broene Counseling Center staff can also help direct students to a variety of books, pamphlets, and other resources on pertinent information such as depression, anxiety, relationships, sexuality, alcohol, stress, eating disorders, and much more.

Counselors are available by appointment. There are also walk-in times Monday through Friday from 3:30 p.m. to 4:30 p.m. when students can meet with a counselor without a pre-arranged appointment. Center hours are 8 a.m. to 5 p.m. Monday through Friday. Counseling services are available year around for any Calvin student. Appointments can be made directly by stopping in at the Center, which is located on the third floor of the Spoelhof College Center, or by calling 957-6123. Students can also visit the Center's website at www.calvin.edu/admin/broene/ for more information. The Broene Counseling Center offers comprehensive and high-caliber services in a confidential manner.

Campus Safety

The mission of the Campus Safety Office is to serve the Calvin community by promoting mutual responsibility for campus safety. It strives to ensure a safe and well-ordered campus environment, relevant educational initiatives, and respectful service of the highest integrity to members of our campus community. Our well-trained staff is avail-

able 24 hours a day, seven days a week. Please visit our website at www.calvin.edu/admin/campus_safety/ for more information.

Career Services

The Career Services Office at Calvin College exists to assist students, staff, and graduates of the College in their vocational considerations, career planning, and career transition endeavors. The staff provides consultation, vocational testing, and informational services in a timely, professional, and confidential manner. The Career Services staff works closely with local, regional, and national employers to match Calvin students, staff, and graduates with employment and vocational opportunities. Services offered are: Career counseling, job search assistance, experiential education program management, career resource information, and on-line job search and job posting services. In addition, the office maintains and distributes professional credentials for Teacher Education, Engineering, and Accounting students. In partnership with students, graduates, and employers, we offer our hearts and minds to do God's work in God's world. Please visit our website at www.calvin.edu/admin/career_services/ for more information.

Chaplain's Office and Campus Worship

To grow in loving devotion to God is the goal our Lord places before everyone who belongs to Him. All members of our community, students and staff alike, are encouraged to make personal devotional time part of the rhythm of their daily schedules. In addition, Calvin College wants its members to participate in the other opportunities on campus that will nurture this devoted love for God.

Public worship is a means of acknowledging God's presence in our lives and maturing in our faith. All students, therefore, are expected to attend one of the many churches located throughout the area and/or The LOFT (Living Our Faith Together) held in the chapel on Sunday evenings at 7:30 p.m.

Chapel services are held weekdays at 10:00 a.m. in the chapel. The college keeps this interlude in its daily schedule so that students and staff may affirm their dependence upon God and grow toward one another in Christian community. In addition to the main service held in the chapel sanctuary, a series of foreign-language worship services and group devotions are held regularly in the smaller meditation chapel located in the lower level of the chapel. The college encourages students to make communal worship part of their routines.

Numerous opportunities exist for other voluntary religious activities, including Bible study groups, faculty-student mentoring groups, prayer groups, Christian service and evangelistic outreach projects, and group fellowships such as InterVarsity Christian Fellowship and Campus Crusade.

If a student desires counseling, he or she is encouraged to contact a local pastor or the college chaplain. Please visit our website at www.calvin.edu/admin/chapel/ for further information.

The Lilly Vocation Project

The Calvin College Lilly Vocation Project provides students with opportunities to deepen their learning about Christian vocation for the church and society. To deepen the understanding of calling the project supports a director of spiritual leadership development. This director nurtures students who, in turn, give spiritual guidance in the residence halls and in off-campus Bible study and discipleship groups. The project also provides resources for student retreats organized by academic departments and campus organizations. In addition, student worship apprentices who plan and participate in student-based worship are supported by this grant.

To prepare students for service this project has several initiatives. A new youth ministry emphasis allows advising, mentoring, experience and targeted courses for students seeking a youth ministry focus. There is additional support for other internships in which

students can explore a Christian ministry future. Finally, each year twelve promising college juniors will be designated as Jubilee Scholars in a scholarship, study and service program for those strongly inclined toward Christian ministry.

This project supports these new positions and programs with a Ministry Resource Center, a resource collection that connects Christian ministry to practice. That Center, located in the Hekman Library, provides materials for those involved in on- and off-campus ministry. It is designed to connect students with gifts in art, theater, music, dance, writing, languages, counseling, business, technology, and other fields with ministry uses.

For more detailed information about the Lilly Vocation Project visit the project web site at www.calvin.edu/vocation.

Health Services

Outpatient medical services are provided on campus to all registered students during the regular school year. Health Services, located in the lower level of Heyns Hall, is open weekdays with limited evening and Saturday hours available. Visits are scheduled by appointment only, unless immediate care is determined necessary. Nurse practitioners and registered nurses staff our facility, with contracted physicians available on a limited basis. When necessary, students are referred to area providers for additional care.

Primary care services include, but are not limited to:

- evaluation and treatment of common illnesses and injuries
- allergy infections
- physical therapy
- women's health issues
- HIV testing and counseling
- smoking cessation counseling and treatment
- physical exams for sports, travel, and employment
- self-care kits and over-the-counter medications at dormitory front desks
- lab and pharmacy

Travel Health and Immunization Services

Our Travel Health Clinic provides comprehensive pre- and post-travel consultation, personal medical evaluations, immunizations, prescriptions, and tips for staying healthy while abroad.

Immunization Policy

Calvin requires all incoming students to show provider-documented immunization status for polio, diphtheria, pertussis, tetanus, measles, mumps, rubella and tuberculin skin testing. Vaccination for hepatitis B and varicella is also required and available at Health Services along with additional vaccines and preventatives for general health and off-campus travel opportunities.

Student Health Insurance

To ensure that students are able to obtain necessary medical care, Calvin College requires minimum health insurance coverage. *KnightCare*, a plan designed specifically for Calvin students, provides year round coverage at a reasonable cost. All students will be automatically enrolled in *KnightCare*, unless they can provide proof of comparable coverage and sign a waiver form by the specified date. Please see our website at www.calvin.edu/admin/health/ for further information.

Residence Life

Living on campus is an integral part of the Calvin College educational experience. The learning that takes place within communities of residents is a catalyst for social, spiritual, moral, and intellectual development. The seven traditional residence halls, with rooms configured in suites of two, and the eleven apartment-style buildings on campus

are all located within short walking distance of academic buildings and parking. All halls are staffed by full-time, Master-level staff members who supervise various student leadership groups and ensure a safe, healthy, and developmental environment for all residents. All student rooms are furnished and have internet and campus cable access. Storage and quiet study rooms are available in hall basements, laundry facilities are free, and meal plans provide a wide variety of food options at every meal. For more information, visit the Housing and Residence Life website at www.calvin.edu/admin/housing.

Calvin acknowledges this important co-curricular ingredient by requiring all first and second year students to live on campus, and by providing optional housing for students beyond their first two-years. Exceptions to this residency requirement are handled individually by the Housing Office and are granted for students commuting from their parents' place of residence, students who are 21 years or older, or students who are two-years beyond their high school graduation date.

Student Development

The Student Development Unit is made up of four distinct areas: Student Development Office, Multicultural Student Development, Service-Learning, and Student Activities. The office staff (Dean of Student Development, Assistant Dean of Student Development) will be some of the first people you meet once you matriculate to Calvin. They plan and implement the orientation programs (for further information, please refer to our website at www.calvin.edu/admin/student_life/orient/index.htm) of the college, namely PASSPORT (summer program) and QUEST (fall program). They also provide a wide-range of services for off-campus students (nearly 40% of the student body resides off-campus), and they provide leadership and administration to the over 50 student organizations on campus.

The Multicultural Student Development Office is headed up by an Assistant Dean. Calvin College is striving to become a genuinely multicultural, anti-racist, Christian academic community. The Assistant Dean of Multicultural Student Development provides training programs and support services as one of many efforts on Calvin's campus. These programs help achieve the goal of multiculturalism through understanding, representing and validating people of color. The Assistant Dean also serves as a link between Calvin College and local ethnic communities. Please visit our website at www.calvin.edu/admin/student_life/msdo/ for further information.

The Service-Learning Center has as its motto, "Learning to Serve – Serving to Learn." Service-learning refers to activities, which are designed both to meet needs within the local community and also to develop the knowledge and understanding of the service-giver. Students participate in the S-LC largely through weekly service activities with a primary emphasis on relationships with disadvantaged members of the Grand Rapids community. Students may also participate in academically based service, which is service integrated within the context of a college course. Students connect conceptual content of their courses to their experiences in the community through structured reflection. Please visit our website at www.calvin.edu/admin/student_life/units/slc.htm for further information.

During college, students may learn and change more than any other period in their lives. This process of learning and changing takes place everywhere – in classrooms, through all-night dorm discussions, and at a concert or movie on campus. Calvin encourages students to embrace and apply a Christian worldview in all areas of life, including popular culture. As a result, the Director of Student Activities and the Student Activities Board plan an entire season of the best possible concerts, movies, comedy, theater, and other activities that will help students critically evaluate these events in light of their faith. Please visit our website at www.calvin.edu/admin/student_life/sab/ for further information.

Services for Students

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 Communication Arts and Sciences. 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*, a student literary magazine, and *Chimes*, the campus newspaper, provide opportunities for student publication.

The Department of Art seeks to arouse interest in the various visual arts. It sponsors workshops, visiting artists, and speakers. Regular educational exhibitions in the Center Art Gallery and a visible permanent art collection provide visual stimulation, aesthetic quality, and an enhancement of the total Calvin environment through the celebration of a rich cultural heritage and support of the art activities of students, faculty, alumni, and other Christians. The student-organized Fine Arts Guild and its subguilds in Dance, Visual Arts, Music, and Writing provide independent expression and dialogue regarding the arts among all the students.

Intercollegiate and Intramural Athletics and Recreation

Intercollegiate athletics play an important role in student life at Calvin. Calvin is a member of the Michigan Intercollegiate Athletic Association (MIAA) and the National Collegiate Athletic Association (NCAA). Calvin men compete in cross-country, golf, basketball, soccer, swimming, baseball, track, and tennis. Calvin women compete in cross-country, golf, volleyball, basketball, swimming, track, softball, tennis, and soccer. We also have club teams in men's hockey, volleyball, and men's and women's lacrosse. To be eligible to participate in intercollegiate athletics, a student-athlete must be enrolled in a minimum of 12 semester hours each semester, be in academic and disciplinary good standing, and be making normal progress toward graduation. Academic good standing is defined in the table and notes found on page 28 of this catalog and the disciplinary standards are listed in the Student Handbook. Students on disciplinary probation are ineligible to participate in intercollegiate athletics. For the purposes of athletic eligibility, normal progress toward a degree is defined as accumulating at least 12 semester hours of credit each semester **plus** the completion of 3 interim courses in a 4-year program.

Intramurals are also an important phase of the physical education program and provide all students with the opportunity to participate throughout the year in a variety of programs.

Both indoor and outdoor facilities are available for recreation whenever classes or scheduled contests are not being conducted.

Student Senate and Other Organizations

The Student Senate serves as an advocate for student issues. It also allocates the budget of student organizations and concerns itself with student publications, homecoming, film arts, the campus radio station, and similar groups.

Nearly forty-five student organizations exist on campus, some of which are related to particular academic departments. All organized clubs have a faculty advisor and receive formal approval through the Student Life Committee.

Student Conduct

Admission to Calvin College is a privilege that may be withdrawn from any student who does not meet the academic and conduct standards of the college. In addition, the college not only expects students to conduct themselves both on and off campus in accord with the Christian goals and standards of the college, but also may refuse admission to, may discipline, may suspend, or may expel any student who, in its judgment, displays conduct or attitudes, whether on or off campus, 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, included in the *Student Handbook*, is also available at the Student Life 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 for so long as a student is enrolled at Calvin College. Among those actions are all kinds of dishonesty, acts of violence, disruption of institutional activities, theft, unauthorized entry, sexual misconduct or harassment, use of alcoholic beverages on and off campus and at extended campus events, drunkenness, profane and obscene language, and use of illegal substances. Sanctions for misconduct range from verbal warning to expulsion.

The judicial processes require a hearing before the designated college administrators or before the Student Discipline Committee. Students are guaranteed a right to testify, to examine evidence, and to have a student or faculty member advise them at the hearings. The judicial process provides for appeal to higher judicial bodies.

Student Protest and Appeals Procedure

At Calvin College the goal to become a model Christian academic community should direct the attempts to resolve conflicts, which may occur between students and faculty members. We would expect that members will all 'accept one another' (Romans 15:7) and that student protest and appeal will occur infrequently and only over matters of significance to the calling as Christian faculty members. Moreover the process of protest should be one which should lead to restoration of Christian community in which the members are affirmed and express love for one another.

1. On occasion, a student may have criticism of a professor for which he or she requests some action. Criticisms may regard the requirements of a course, the nature of a test, a grade received, teaching effectiveness, personal life-style, general performance, or sanctions given for academic dishonesty. The student should present such criticism directly to the faculty member. The student criticism should be heard and given serious attention by the faculty member.
2. If the faculty member's response does not satisfy the student, or if the student, for good reason, does not feel free to approach the faculty member, the student should bring the criticism to the department chairman or the academic dean. The chairman or the academic dean should work for resolution.
3. If the student or faculty member does not accept the advice of the chairman or academic dean, the academic dean will suggest one of the following procedures:
 - a. If the complaint regards a sanction given by a faculty member for academic dishonesty, the student must follow the procedure outlined in 'The Student Conduct Code and Disciplinary Procedures' found in Section 4.2.8 of the Faculty Handbook.
 - b. If the protest is on matters other than sanctions given by a faculty member for academic dishonesty, the academic dean will refer the issue to an ad hoc committee of two faculty members, a student, and the academic dean. The ad hoc

committee should hear the student protest and hear the professor's response, as well as collect appropriate material evidence. The student, if he or she so chooses, may ask a student, faculty member, or a Student Life Division dean to give counsel at this hearing. The committee should work for resolution of the differences and prepare a written recommendation to the provost, a copy of which will be sent to the student and faculty member.

4. The decision of the ad hoc committee may be appealed to the provost by either the student or the faculty member. In cases where the student protest involves the academic standards, i.e., course requirements or grades, the decision may be appealed to the Academic Standards Committee. Cases, where the protest involves teaching effectiveness, professional standards, religious commitment, or personal life-style may be appealed to the Professional Status Committee.
5. The report of either of these committees will be advisory to the provost, who will prepare a recommendation for the president.
6. Further appeals by the student or faculty member would be to the president and by way of the president to the board of trustees. Correspondence addressed to a member of the board of trustees should be sent to the Board of Trustees office, Spoelhof Center. Such correspondence is routinely opened by a member of the board staff and forwarded to the person to whom it is addressed and to the president. If the correspondence is marked 'confidential', it will be forwarded unopened to the trustee to whom it is addressed.
7. Students who wish to appeal a decision of another nature should contact the registrar or vice president for student life to determine the appropriate process.

Use of Motor Vehicles

Motor vehicles owned or operated by Calvin students must be properly registered with the Campus Safety Department 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 strictly enforced. The driving regulations and requirements of the Michigan Motor Vehicle Code apply to all driving when on the campus.

Orientation and Advising

All first-year students are required to participate in Passport, a program of orientation held during the summer and/or just prior to Quest, the fall orientation program. Throughout orientation, students will meet key faculty members and administrators, receive information about college academics, activities and facilities, obtain registration materials, and meet with a faculty advisor to plan for the fall semester. Transfer student orientation takes place during a special Passport session, one day in August, or just prior to the beginning of the fall semester. All students are assigned individual advisors from the faculty. These faculty members keep office hours during which time they are available to assist students in making decisions about courses and programs.

Students are expected to assume responsibility for obtaining academic advising. They must keep themselves informed about curriculum requirements, both in the core curriculum and in their programs of interest; they are expected to initiate conferences with their advisors and to come prepared with up-to-date information about the courses they have completed; and they must be aware of academic deadlines and regulations.

By the end of the sophomore year, each student must work out with a faculty advisor the declaration of a major. The associate registrar for advising and other staff in the registrar's office are available to help students with advising problems.

Additional specialized advising is offered through Student Academic Services. The Broene Counseling Center offers career testing and counseling for helping students to select a major and/or career.

Hekman Library

Calvin's Hekman Library is one of the finest libraries in West Michigan. Its collection consists of nearly one million items (books, journals, microforms, government documents, recordings, etc.) available to students more than 100 hours a week. Its large, growing, digital library (www.calvin.edu/library/) includes nearly ninety subject-specific databases that access journal articles and millions of full-text articles. A friendly, professional public service staff is eager to assist students and is readily available at posts just inside the main entrance on the second floor. The quiet, comfortable environment provides great places to study with ample carrels, tables, and lounge furniture. It is just one floor away from more than 200 computers in the Information Technology Center, providing seamless access to research material and the tools needed to complete assignments.

Several special collections are housed in the library. The H. H. Meeter Calvinism Research Collection, located on the fourth floor of the library, is one of the most extensive collections of books and articles on John Calvin and Calvinism available anywhere. 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, is located on the second floor of the library. The Calvin Library is a partial depository of government documents, holding approximately 125,000 items. Cayvan Services with its many recordings and tapes is available for both the study and enjoyment of music.

Information Technology

Calvin Information Technology (CIT) provides computing, printing, and telecommunication services to students, faculty, administrators, and staff of the college. Our vision is to promote and support information technologies at Calvin College that are appropriate to the academic and administrative needs of the college. The CIT offices, the Information Technology Center (the main student computer lab), and the Instructional Technology Exploration Center (ITEC), are located on the first floor of the Hekman Library.

The Instructional Technology Exploration Center (ITEC) provides faculty a place where they can make use of high-end hardware, software, reference materials, and consulting services as they develop digital media to support their teaching or research.

The Information Technology Center (ITC) is available to all students, faculty, and staff showing a current Calvin-ID. This lab offers Windows and Macintosh computers attached to the college network and the internet, several computer classrooms, multimedia and multi-user stations, zip drives, cd burners, scanners, and laser and color printing. There are other student computer labs on campus located in residence halls, as well as many department-specific labs. Most student labs provide access to MS Office, student email, library research tools, software for web browsing and web development, and a wide variety of academic software.

Calvin provides each student with an email account. This account remains active for all registered students until graduation. Access to the Internet and email is available from all lab computers and many stand-up infoXpress stations around campus.

Students residing in Calvin residence halls may be part of the Residential Network (ResNet), for a small fee each semester. ResNet allows students Internet and email access from their rooms. Trained personnel are available to answer ResNet connection questions. For more information on ResNet, please see www.calvin.edu/it/ic/resnet.

Questions regarding computers on campus may be directed to the CIT Helpdesk at 957-8555. Additional information about computer services can be found by visiting the CIT web site at www.calvin.edu/it/.

Instructional Resources Center

The IRC is comprised of the following group of departments and services:

The Audio-Visual Department

The A-V Department primarily serves the college's instructional programs, but supports campus-wide needs, as well by providing equipment and services for college use. These include: TV, vcr, video and computer projector, digital camera, video camcorder, PA system, audio cassette and CD player, slide projector, laser pointer, audio & video duplication, poster lamination, passport photos, and more. It also includes a 'paper and paint' workroom equipped with materials for self-serve creation of bulletin boards, posters, signs, banners, folders, etc.

Instructional Graphics

Instructional Graphics provides presentation design and production services to faculty and students for classroom or conference needs. These include: Layout and design assistance; printing to 35mm slides, overhead transparencies, computer files, or large-format color posters; and scanning prints and slides, and shooting and duplicating slides.

Calvin Media Productions

The college's in-house media production department, CMP develops documentary and instructional video, TV, and radio programs, WWW sites, and other forms of multimedia. CMP operates a professional video production facility as well as the video studio and student video-editing lab.

Publishing Services

The Publishing Services Department supports administrative departments, academic departments, and student organizations by providing design services, consultation and pre-press production for a variety of print-related material. These include the college catalog, campus directory, newsletters, ads, brochures, posters, books, etc.

The Curriculum Center

The Curriculum Center is a multimedia educational materials library designed to support the Teacher Education Program. It is also available for use by other departments and programs. Hours are Monday–Thursday, 8:00 a.m. to 10:30 p.m.; Friday and Saturday, 8:00 a.m. to 8:00 p.m.

The Distance Learning Classroom

The Distance Learning Classroom is equipped to provide live, two-way video-and-audio conferencing connections to sites throughout the world.

Office of Student Academic Services

The Office of Student Academic Services in Hiemenga Hall 446 provides many forms of student learning assistance. Peer tutors for most core courses and some upper level courses are available to students whose professors agree that tutoring would be helpful. Also, academic counseling and testing are available for students with difficult learning problems. Students with disabilities, international students, and students for whom English is a second language receive services from the office as well. Certain students are required, as a condition of admission or as a requirement of probation, to participate in specified aspects of these services. Please see additional information under *The Access Program* on page 39 and *Academic Services* on page 49, or visit our website at www.calvin.edu/academic/sas.

Rhetoric Center

The Rhetoric Center, located in Hiemenga Hall 322, offers free tutoring in writing. Instructors will often require or encourage their students to seek help at the Rhetoric Center, or students may at any time request an appointment with a tutor (appointments should nor-

mally be made ahead of time). Students from all disciplines and at all levels of experience are welcome. The Rhetoric Center is open Monday–Friday from 9:00 a.m. to 5:00 p.m. and from 7:00 p.m. to 9:00 p.m. Monday–Thursday, during fall and spring semesters.

The Calvin Alumni Association

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

The Calvin Alumni Association, founded in 1907, is composed of all persons who have attended Calvin College for at least one-year or who have completed eight courses. Persons who have graduated from Calvin Theological Seminary are also considered members of the Association. There are currently more than 50,000 Calvin alumni around the world, many of who is part of 34 local alumni chapters.

The Calvin Alumni Association is governed by a board of 23 alumni from all over North America, each serving three-year terms. The board meets three times each year—during Parents Weekend (October), Homecoming (February), and Commencement (May). The work of the Association is facilitated by the Executive Director of Alumni and Public Relations.

The Association sponsors *Spark*, the alumni magazine; services to alumni chapters; career networking systems; numerous educational and social programs, including ‘Mid-summer’ (Calvin’s vacation college) and alumni class reunions; and contributes to faculty research projects. The alumni-financed program of grants and scholarships is of special interest to students. Information concerning all of these may be obtained from the Alumni and Public Relations Office, (616) 957-6142; on the web at www.calvin.edu/alumni; or via email at alumni@calvin.edu.

The Calvin Institute of Christian Worship

The Calvin Institute of Christian Worship at Calvin College and Calvin Theological Seminary aims to promote scholarly study of the theology, history, and practice of Christian worship and the renewal of worship in local congregations. The Institute, which is housed on the fourth floor of the Hekman Library, provides courses at the college and seminary in the study of worship, an annual conference on worship and the arts, scholarly lectures and conferences on worship-related topics, published worship resources, regional workshops offered at sites throughout North America, and consulting services for congregations that seek to promote worship renewal. For updated information on its program, see www.calvin.edu/worship or contact the Institute’s director, J. Witvliet.

The January Series

The January Series of Calvin College is a month-long lecture/cultural enrichment series given each year during Interim. It is the premiere series of its kind in the United States. Three times in the last six-years the *Series* has been awarded the prestigious Silver Bowl Award for ‘The Best College and University Lecture series in the USA.’ Each presentation during the past few years was available worldwide on our web site via RealAudio Net Cast. Many of the presentations are archived and can be accessed at www.calvin.edu/january.

The award winning *Series* takes place for fifteen consecutive weekdays during the month of January in the Fine Arts Center Auditorium from 12:30 p.m. to 1:30 p.m., and is offered as a free gift to the students and faculty of Calvin College as well as to all of West Michigan.

Each speaker is widely recognized as a credible and articulate authority in his or her field of expertise. Scheduled to date for the 2003 Series: Harm de Blij, Michelle De Young, Rod Englert, Stanley Hauerwas, Marcus Hughes, Jean Kilbourne, Quentin Schultze, King’s Noyse, Richard Norton Smith, and James Vander Kam.

Admission and Standards

Procedures for Admission

In selecting students for admission, Calvin College looks for evidence of Christian commitment and for the capacity and desire to learn. Students who are interested in the Christian perspective and curriculum of Calvin and who show an interest in its aims are eligible for consideration. Although the prospect of academic success is of primary consideration, the aspirations of the applicant, the recommendation of a high school counselor, teacher, or principal, and the ability of Calvin to be of service will also be considered in admission decisions. The college admits students of any race, color, and national or ethnic origin.

Applicants will be notified concerning admission shortly after the Office of Admissions receives the following:

1. A Completed Application Form (also available online at www.calvin.edu);
2. Non-refundable application fee: \$35 online application fee or \$50 paper application fee (fee waivers will be considered upon request);
3. Completed Essays;
4. High School Transcript;
5. Academic/Educational Recommendation;
6. Test results of the American College Test (ACT) or Scholastic Aptitude Test (SAT I); and
7. Transcript(s) from any college(s) previously attended.

All documents and supporting data required for admission become the property of Calvin College and will NOT be returned to the applicant.

Completed applications are considered on a 'rolling' basis, and admission is offered as long as space is available. Applicants will be notified of an admission decision soon after their files are complete.

Admission Standards

Requirements for Regular Admission

Applicants with a high school average of "B-/C+" (2.5) or higher in college preparatory courses are normally given regular admission if their college entrance test scores meet the guidelines in the table that follows:

Minimum Test Scores Needed for Regular Admission

| ACT | ACT | ACT | ACT | | SAT I | SAT I |
|---------|------|---------|-------|-----------|--------|-------|
| English | Math | Reading | Comp. | <i>or</i> | Verbal | Math |
| 19 | 20 | 16 | 20 | | 470 | 470 |

Applicants with lower grades and scores or with fewer college preparatory courses in their high school program are reviewed individually by the Committee on Admissions. Some of these applicants may be admitted under special conditions. Others may be required to take placement tests and non-credit courses designed to enhance their success. (See 'Admission Under Special Conditions' on page 22.)

Applicants must be high school graduates or have graduated from an equivalent program. Applicants who are at least nineteen years of age but have not completed high school or its equivalent may be granted admission provided they have successfully com-

pleted the General Educational Development Test (GED) and submit satisfactory scores on one of the entrance examinations.

The following components must be included in the applicant's college preparatory work:

1. A minimum of three-years of college preparatory courses in English.
2. Three-years of college preparatory mathematics are required.
3. A minimum of two-years of college preparatory courses in two of the following fields:
 - Social Sciences
 - Languages
 - Natural Sciences
4. Students must also complete three-years of study from one of the following fields:
 - Social Sciences
 - Languages
 - Natural Sciences

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. The model high school program given below indicates the recommended course work to be taken in high school.

| | | |
|-------------------------|---------|---|
| English | 4 years | |
| Mathematics | 3 years | Three-years of college preparatory mathematics is required. Four-years are desirable for students entering mathematics-related majors. |
| Foreign language | 2 years | Preferably four; ideally the last unit in grade 12. Beginning in the fall of 2005, 2 years of foreign language will be required for every program at Calvin. |
| Science | 2 years | Biology, chemistry, or physics; one with a laboratory. Chemistry and biology are recommended to prospective nurses. Three units are desirable for students considering programs in the sciences or health fields. |
| History/Social Sciences | 3 years | |
| Electives | 3 years | Keyboarding and college preparatory courses. |

Admission Under Special Conditions

Applicants with high school or college records or with ACT/SAT I test scores that do not meet regular admission standards may be admitted on condition if there is other evidence of academic promise. Conditionally admitted students are required to participate in the Access Program and to take assigned placement tests. They will receive special advising and may register for no more than 15 semester hours including any Access Program courses. They also are encouraged to limit their involvement in extra-curricular activities. Conditions attached to admission must be completed during the student's first year.

Admission of Transfer Students

Students transferring from other colleges or universities must follow the same application procedures as first-year students. Transcripts from all previous colleges attended must be received prior to consideration for admission. ACT or SAT I test results are also required for transfer applicants with less than two-years of previous college experience. The minimum cumulative grade point average for students transferring from a 4-year institution is 2.0 and from a 2-year college, 2.5. Applicants with averages below the standard, or with lower scores, or with fewer college preparatory courses in their high school program are reviewed individually by the Committee on Admissions. Some of these applicants may be admitted under special conditions. Others may be required to take placement tests and non-credit courses designed to enhance their success. (See 'Admission Under Special Conditions' above.)

Transfer credit will normally be awarded for work done in accredited institutions. The courses must be academic and similar in nature to courses offered at Calvin College. A minimum grade of "C" is required in each course to receive credit. No more than seventy semester hours of advanced credit will be allowed for work completed at an accredited community college. Furthermore, no matter how much work done at other institutions may be accepted, all students must complete their last year in residence and at least three upper-level courses in their major to graduate from Calvin.

A maximum of 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 normally accepted, provided they have been approved by the registrar in advance. In no case, however, will work in a community college be accepted after a student has accumulated more than 70 semester hours of credit.

To meet requirements for a Calvin degree, transfer students must complete one Interim course for each year in residence. Students may not take more than two Interim courses in a single department. Courses which meet off campus normally require special application in advance of registration.

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.

Admission of International Students

Calvin College welcomes international students who can demonstrate their 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 I), and who can show evidence of their ability to pay most of the cost of their education. Students should be certain that Calvin College offers the programs they need. The college is authorized under federal law to enroll non-immigrant alien students.

To begin the application process, international students are requested to complete a pre-application form, available from the Office of Admissions. Upon approval of the pre-application, international students are required to submit the following:

1. Completed Application Form (available online at www.calvin.edu);
2. Non-refundable application fee (fee waivers will be considered upon request);
3. Completed Essays;
4. Transcripts from High School and/or College(s) attended;
5. Academic/Educational Recommendation;
6. Test results of the American College Test (ACT) or the Scholastic Aptitude Test (SAT I);
7. Test results of the Test of English as a Foreign Language (TOEFL);
8. Declaration of Finances; and
9. Profile of Educational Background Form.

The ACT or SAT I is not required of students transferring from another college or university where they have earned at least one-year of credit. Applicants for whom English is a second language must have an adequate command of English as demonstrated by their performance on the Test of English as a Foreign Language (TOEFL). The minimum TOEFL score for regular admission is 550 (or 213 on the computerized version). In certain situations, a student with a lower score may be admitted with a provision for further intensive language training. The TOEFL is administered throughout the world by the Educational Testing Service. (The TOEFL code number for Calvin College is 1095).

When international applicants are accepted for admission, they will be sent a formal letter of admission by the Director of Admissions. Applicants must show sufficient evidence of financial support for college costs. If this support level is demonstrated, an enrollment deposit of \$2500 toward first year costs is required. Upon receipt of the specified deposit, the Certificate of Eligibility (I-20) will be forwarded to the student, who should then make application for a student visa immediately with the nearest United States Consul.

Upon enrollment, international students for whom English is a second language must take English courses each semester until they have successfully completed English 101, a course required of all students for graduation. However, the college may require a locally-administered placement test and a subsequent review course in English as a Second Language prior to English 101 if the need is indicated by placement testing results. International students for whom English is a second language can satisfy the graduation requirement of additional language study with their native language.

Academic Forgiveness Policy

All students must meet the 2.0 grade point average standard for graduation. However, students who have completed course work at Calvin prior to their readmission can invoke an academic forgiveness option. To do so, students must specifically request this option at the time of readmission, and at least five-years must have elapsed since their last Calvin attendance date. Under the academic forgiveness policy, all student grades, in their prior academic period at Calvin, are excluded from the GPA calculation required for graduation, and all course and grade information, even when not included in the GPA calculation, remain on a student's official transcript. The semesters for which academic forgiveness has been granted will be so noted. Only those courses in which a student received a "C-" or better can be used as semester hour credit toward graduation requirements. Other prior coursework must be repeated or replaced in an approved manner.

Enrollment Deposit

An enrollment deposit of \$300 is required of all enrolling first-year, transfer, and readmitted students. This deposit serves as a confirmation of the student's plans to enroll and is applied toward the orientation fee and housing deposit (for students living on campus). The remainder is applied to the student's tuition charges. First-year students from the U.S. must pay this deposit by May 1. The due date for Canadian and transfer students is June 1. The enrollment deposit is not refundable after the due date. Former students who have been readmitted to the college must pay their enrollment deposit by August 1. International students are required to pay an enrollment deposit of \$2,500 toward their first year costs.

Entrance Examination Information

Prospective first-year students are advised to take the ACT or SAT I entrance examination during the spring semester of their junior year or in the fall of their senior year. Candidates for entrance examinations must register for them at least one month prior to the testing dates.

The American College Test (ACT) is normally given five times per year. Registration 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 also required by the State of Michigan for its competitive scholarship program.

Applicants not able to take the ACT may submit Scholastic Aptitude Test (SAT I) results. Registration forms for the SAT I 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 area, should apply to the College Entrance Examination Board, Box 1025, Berkeley, California 94701.

Profile of Calvin First-Year Students

The middle 50% of the first year students who enrolled at Calvin College in the fall of 2001 have the following academic profile:

High school grade point average: Between 3.2 and 3.9 (on a 4-point scale)

ACT Composite Score: Between 23 and 28

SAT I verbal plus math: Between 1060 and 1290

The five-year graduation rate for entering first-year students is 69%; most finish a degree in four-years carrying a normal course load. The first to second year retention rate is 86%.

Policies for Course Credits and Exemption Examinations

Some students are able to earn advanced college credit in certain subjects. This may be secured in any of five ways:

1. **Advanced Placement** — At the time of admission, first-year students may submit scores from an Advanced Placement (AP) Examination conducted by the College Board. While the minimum acceptable score is 3 or 4, depending on the test, the amount of credit awarded for higher scores varies. Detailed information is available from the registrar's office. Students may not receive both AP credit and a high school exemption for the same core requirement.
2. **International Baccalaureate (IB)** — IB credit will be given to students who receive a grade of 5 or higher on Higher-level classes. No credit will be given to Subsidiary-level classes.
3. **Departmental Examinations** — Regularly enrolled students may meet any core requirement by departmental examination and may, except when the department deems this inappropriate, receive regular academic credit for any course by examination. Only one exam per department may be taken unless prior approval is given by the registrar. Such tests must be taken in lieu of registration for the course and may not be used as repeated courses. Students wishing to take departmental examinations may obtain forms from the departments from which they wish to take the exams. The student will be charged a \$15 fee for an exemption exam and \$45 for a credit exam. The student's performance on the examinations will be recorded on the student's record.
4. **OAC** — A mark of 75 or higher in an Ontario Academic Course approved by the Calvin faculty will be given credit. Please contact the registrar's office for a listing of credit given for OACs.
5. **Non-Traditional Methods** — Calvin students may obtain transfer credit from on-line and correspondence courses that have been previously approved by the Calvin registrar. Additional credits may be obtained through credit-by-exam programs such as the College Level Examination Program (CLEP). Credit is granted to students who receive a satisfactory score on any of the CLEP subject examinations of the College Board. For more detailed information, please contact the registrar's office for a listing of credit given for CLEP subject exams.

A maximum of 32 semester hours may be obtained through the transfer of non-classroom-based credit.

Furthermore, students who have completed appropriate courses in high school may be exempted from certain college course requirements. This is possible in foreign language, mathematics, the fine arts, and the natural sciences. Consult the registrar's office for a description of the ways high school courses satisfy college requirements.

Nondiscriminatory Policy

Calvin College does not discriminate with regard to age, race, color, national origin, sex, or disability in any of its education programs or opportunities, employment, or other activities. Questions pertaining to Title IX, which prohibits discrimination based on sex, and Section 504, which prohibits discrimination based on disability, may be directed to the Director of Admissions, Calvin College, 3201 Burton Street SE, Grand Rapids, Michigan, 49546, (616) 957-6106.

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. Formal 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 \$55, which includes campus parking privileges.

Auditors must be formally admitted to the college and must pay the tuition for auditing, which is described below:

Students with 0 to 5 non-audit credits who choose to audit a class will be charged at \$190 per credit hour for the audited course. Students with 6 to 11 non-audit credits who choose to audit a class will be charged at \$290 per credit hour for the audited course. Students with 17+ non-audit credits who choose to audit a class will be charged at \$190 per credit hour for the audited course.

The audited course is listed on the student's academic transcript, but no credit or grade is recorded. For tuition purposes, currently enrolled students who audit a course will have half the semester hours of the audited course added to the total of registered hours (i.e., 12 total hours + 4 audit hours = 14 hours). 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 nine weeks of the semester; students enrolled in a course for credit may change to audit only during the first nine weeks.

A student may not visit or audit a course or course component, which is by its nature practical or applied, such as applied music or a lab.

Enrollment in Seminary Classes

Full-time college students may, as a part of a program worked out with their departmental advisors, carry up to two courses in Calvin 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 registrar of the seminary and the college approve.

Student Load and Classification

The typical undergraduate student load is 12 to 16 semester hours per semester. The normal course load permits students to register for courses in applied music, basic physical education, and drama in addition to a typical academic load. Non-credit review courses are counted as part of a normal load, and students on probation or condition may be required to limit their load to 12 semester hours. In exceptional cases, a student may apply

for permission from the registrar to carry more than 17 semester hours. Such an application requires the recommendation of the student's academic advisor or department chair 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.

Normal progress toward the degree for full-time students requires that a minimum of 12 semester hours be earned each semester. Normal progress also requires the completion of 3 interim courses. A more typical load is 31 semester hours per year, which enables most students to complete degree requirements in 4 academic years.

Undergraduate students are classified as first-year students until they have earned 27 semester hours of credit. Students with a minimum of 27 semester hours of credit completed will be classified as sophomores; those with 58, as juniors; and those with 89, as seniors. Classification for the purpose of college records will be revised at the beginning of each academic semester.

Grading Systems

Grades given during the regular semester are designated by letters A, excellent; B, good; C, average; D, just passing; F, failure; I, incomplete; W, authorized withdrawal; and N, unauthorized withdrawal.

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 as transfer credit or in cooperative programs at other colleges and universities are recorded on students' records but are not included in the compilation of their average at Calvin.

Ordinary grades for the interim are H, honors; S, satisfactory; and U, unsatisfactory. These do not carry grade point values and are not averaged in the student's total record, but the student normally receives 3 semester hours toward the 124 required for graduation for each interim course satisfactorily completed. Interim courses carrying core credit are normally graded according to the traditional letter system and will be included in the student's average.

Graduate workshops are graded with S and U grades only.

Auditors are given grades of AU. However, if they fail to attend classes, the instructor will report a grade of AUN.

Students may alter their schedules during the first week of classes without grades of W being recorded on their records. After that time, grades of W, authorized withdrawal, will be recorded if they leave courses with the written approval of their instructors by the end of the ninth week of the semester. Students who discontinue classes without permission or notification are not entitled to a grade of W but will be given an N, unauthorized withdrawal. This grade is computed as an F in determining a student's grade point average. However, students who withdraw from school at any time with the approval of the registrar and of one of the student deans may be given grades of W in all courses.

Students may repeat any courses by properly registering for them, but must inform the instructor when they are repeating a course. Only the latest grade, whether higher or lower, shall be included in the compilation of a student's cumulative grade point average. The original grade is not expunged from the record, but is noted as a repeated course. A student will not receive additional course credit for repeated courses.

If students fail to complete all the required work or to sit for the final examination, instructors may, if they consider a student's reason valid, give a grade of I, incomplete, rather than a grade of F. The grade of I shall be computed as a neutral grade in determining a student's grade point average. Students given an I in the fall semester or in the interim must make up the deficiency by March 15 of the following spring semester; if given an I during the spring semester or summer session, they must make up the deficiency by October 15 of the following fall semester. If they fail to do so, grades of IN will

be entered on their records. A grade of F will be altered only if a student reregisters and retakes the course in which it was given. Grades of I are never expunged from the records. When a final grade is received or the deadline is passed a new grade preceded by an "I" will be rewarded.

The Dean's List

Full-time students, including graduate students, with a semester grade point average of 3.5 or higher and a cumulative grade of 3.3 or higher will be placed on the Dean's List. Part-time students who meet the grade point requirements above and have earned 3 semester hours within the last year and at least 12 semester hours within the last 2 years will be placed on the Dean's List. The Dean's List is compiled at the end of each semester when grade reports are printed. Interim grades and subsequent grade changes normally do not alter the list.

Academic Probation and Dismissal

Each student admitted to Calvin College is assumed to have the preparation, the desire, and the ability to make satisfactory progress toward a degree. In practice, however, some students do not make the progress expected of them. Such students are notified, offered special assistance and academic counseling, and given an opportunity to improve their records. Failing in that, however, they will be dismissed.

The records of all undergraduate students are reviewed after each semester, and the academic status of full-time students is determined according to the following schedule:

| <i>Cumulative total of semester hours attempted</i> | <i>Minimum cumulative grade point average needed for continuation</i> | <i>Minimum cumulative grade point average needed for good standing</i> | <i>Minimum percent of attempted hours, which must be credited for good standing</i> |
|---|---|--|---|
| 16 or fewer | 1.0 | 1.5 | 66% |
| 17 – 31 | 1.30 | 1.65 | 66% |
| 32 – 49 | 1.45 | 1.75 | 68% |
| 50 – 67 | 1.60 | 1.85 | 70% |
| 68 – 85 | 1.75 | 1.95 | 72% |
| 86 – 104 | 1.90 | 2.00 | 74% |
| 105 – 123 | 2.00 | 2.00 | 77% |
| 124 or more | 2.00 | 2.00 | 80% |

The number of semester hours attempted is the number of hours for which a student is registered at the beginning of the second week of classes. Credited hours are those for which the student has earned credit that applies toward a degree.

While Academic Services courses are counted toward the 12 semester hours needed for full-time status, they are not counted in the number of semester hours attempted or credited, or in the cumulative grade point average.

Courses that are repeated are counted in the number of courses attempted, but not in the number of semester hours credited. For the purposes of calculating GPA, incompletes are calculated as a neutral grade.

Students receiving benefits from the Department of Veterans Affairs are placed on academic probation if their GPA falls below 2.00 and must, within the next two semesters, raise it to 2.00 in order to continue to be certified for such benefits. Such students must, prior to enrolling for the final 12 semester hours, have earned a cumulative grade point average of 2.00. If any student receiving veteran's benefits fails to come off probation within the prescribed probation period, the school will inform the Veterans Administration. The student will be informed, in writing, that the Veterans Administration has been notified.

Any student whose average falls below the minimum required for continuation is subject to dismissal. Those permitted to continue, but not meeting the requirements for good standing are placed on probation. Students placed on probation must, in the semester following, earn a current grade point average equal to or better than the cumulative average required for good standing in that semester, e.g., a student who has attempted 14 semester hours during the first semester and is placed on probation in the second semester must average 1.65 or above. Students who fail to meet the standards for good standing during the semesters they are on probation are subject to dismissal. In addition, students placed on academic probation will be required to meet a number of conditions as outlined by the Academic Review Committee and Student Academic Services. Conditions may include, but are not limited to, a certain number of semester hours, meetings with a probation counselor, a limit on the number of hours of outside employment, etc. Failure to meet the specified conditions will constitute grounds for immediate dismissal. First-year students placed on probation may register for no more than 12 semester hours and may be required to successfully complete an Academic Support Program review course or to complete, in good faith, a program of academic counseling with an advisor. All students on probation are expected to limit extracurricular activities. First-year or transfer students admitted with conditions must meet these conditions during their first year of enrollment. Failure to meet the terms of specified conditions will constitute grounds for immediate dismissal.

Students not permitted to continue may appeal their academic dismissal to the Academic Review Committee, whose decision is final. One-year must elapse before students dismissed for poor academic performance are eligible to petition for readmission. A request for readmission will be reviewed by the Academic Review Committee and 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.

The Family Education Rights and Privacy Act (FERPA)

The Family Educational Rights and Privacy Act of 1974 helps protect the privacy of student records. The act provides for the right of the student to inspect and review education records, the right to seek to amend those records, and to limit disclosure of information from the records.

Students who are currently enrolled at Calvin College or formerly enrolled students, regardless of their age or status in regard to parental dependency are protected under FERPA. Parents of students termed 'dependent' for income tax purposes may have access to the student's educational records.

With certain exceptions, a student has rights of access to those records which are directly related to him/her and which are maintained by Calvin College. 'Educational Records' include any records in the possession of an employee, which are shared with or accessible to another individual. The records may be handwritten or in the form of print, magnetic tape, film, or some other medium. This would include transcripts or other records obtained from a school in which a student was previously enrolled.

Official Calvin College transcripts are released only when requested in writing by the students. The fee is \$5 per copy. Transcripts will not be released for students who have failed to meet their financial obligations to the college.

Calvin may disclose information on a student without violating FERPA through what is known as 'directory information'. This generally includes a student's name, address, telephone number, date and place of birth, major field of study, participation in officially recognized sports and activities, weight and height of athletes, dates of attendance, degrees and awards received, and other similar information. A student may restrict the release of his/her directory information by making a request in writing to the registrar.

In certain other situations, a student's consent is not required to disclose educational information.

Thirteen Exceptions are:

- 1) to school officials who have 'legitimate educational interests';
- 2) to schools in which a student seeks to enroll;
- 3) to Federal, State, and local authorities involving an audit or evaluation of compliance with education programs;
- 4) in connection with financial aid;
- 5) to State and local authorities pursuant to a State law adopted before November 1974 requiring the disclosure;
- 6) to organizations conducting studies for or on behalf of educational institutions;
- 7) to accrediting organizations;
- 8) to parents of a dependent student;
- 9) to comply with judicial order of subpoena;
- 10) health or safety emergency;
- 11) directory information;
- 12) to the student; and
- 13) results of disciplinary hearing to an alleged victim of a crime of violence.

Requests to disclose educational information will always be handled with caution and approached on a case-by-case basis.

Students who believe that their education records contain information that is inaccurate or misleading, or is otherwise in violation of their privacy, should discuss their problems informally with the person in charge of the records involved. If the problems cannot be resolved, the student may request a formal hearing by the registrar. The request must be made in writing to the registrar who, within seven days after receiving the request, will inform the student of the date, place, and time of the hearing. Students may present evidence relevant to the issues raised. The hearing officer who will adjudicate such challenges will be the registrar, or a person designated by the registrar who does not have a direct interest in the outcome of the hearing. The educational records will be corrected or amended in accordance with the decisions of the hearing officer, if the decisions are in favor of the student. If the decisions are unsatisfactory to the student, the student may place with the educational records statements commenting on the information in the records or statements setting forth any reasons for disagreeing with the decisions of the hearing officer. The statements will be placed in the educational records, maintained as part of the student's records, and released whenever the records in question are disclosed.

Application for Degree and Certificates

In addition to the formal requirements for degrees described in the section on 'Core Curriculum' beginning on page 33, students must satisfy certain technical requirements. Normally, they must complete their last year in residence at Calvin. They must also complete a Declaration of Major Form and have it signed by their departmental advisor and must meet all of the conditions specified in that sheet. (These sheets normally are completed during the sophomore or junior year.) Finally, they must file 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 may not participate in the May graduation ceremony unless they are within two courses of meeting their graduation requirements or have the approval of the chair of the department of their major and the registrar.

Students desiring to graduate with an honors designation must apply for admission to a departmental honors program and meet those requirements and the general honors program requirements. Consult page 40 for details.

Core Curriculum

The Core Curriculum: An Engagement with God's World

Life is more than a job. Most students graduating from Calvin College will pursue a career in the professions. They will become teachers, accountants, engineers, ministers, architects, research biologists, doctors, speech therapists, lawyers, social workers, nurses, and the like. But whatever their particular employment, they will also become citizens, neighbors, parents, parishioners, consumers, and, more generally, participants in North American culture.

The core curriculum at Calvin College is a preparation for life. While the major or the professional program prepares students for the successful pursuit of a job, the core equips students for a life of informed and effective Christian service in contemporary society at large, for an engagement with God's world.

As such, the core curriculum at Calvin College participates in a long tradition of liberal arts education, a tradition that stretches back the ancient Greco-Roman world. Originally designed to prepare those free from the necessity of work for a life of public service, the liberal arts course of study began with the "trivium" - logic, rhetoric, and grammar. Logic was to enhance a student's ability to construct and evaluate knowledge claims; rhetoric, to develop the powers of persuasive communication in the public square; grammar, not just to learn the mechanics of a language, but to shape character through exposure to the ideals and examples embedded in the canonical texts of a culture. In short, the aim of the trivium was to render the liberal arts student intelligent, effective, and virtuous.

The goal of the core curriculum at Calvin College is likewise divided into three parts: Knowledge, skills, and virtues. The courses in the core are designed to impart a basic knowledge of God, the world, and ourselves; to develop the basic skills in oral, written, and visual communication, cultural discernment, and physical activity; and to cultivate such dispositions as patience, diligence, honesty, charity, and hope that make for a life well-lived — of benefit to others and pleasing to God.

The spirit of the Christian liberal arts curriculum 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. Other degrees offered by the college include the Bachelor of Fine Arts in Art, the Bachelor of Science in Recreation, the Bachelor of Science in Nursing, the Bachelor of Science in Accountancy, the Bachelor of Science in Engineering, the Bachelor of Social Work, the Bachelor of Science in Communication Disorders, Bachelor of Computer Science, and the Master of Education. Cooperative bachelor of science degrees are offered with a number of other institutions in medical technology, occupational therapy, and special education.

Because of the complexity of the Calvin curriculum and the many alternative ways of meeting the formal requirements, students must confer with their advisors regularly in planning their academic programs. Students may graduate under the Calvin catalog in effect at the time of their initial registration or any succeeding catalog as long as the catalog chosen is not more than seven years old when graduation requirements are completed. Students who have not attended the College for more than seven years must re-enter the College under the catalog in effect at the time of re-entry.

The Core Requirements

In keeping with the tradition of liberal arts education, the core curriculum of Calvin College is designed to equip students with the knowledge and skills required for an informed and effective life of Christian service in contemporary society. Strong high

school preparation may reduce the number of courses required in the core, and that number may be further reduced by special examinations in any subject.

Required core courses are divided into 4 components: The core gateway, core skills, core studies, and the core capstone. The gateway into the core is made up of two linked courses required of all first-year students: Prelude and Developing a Christian Mind (DCM). Prelude is progressive orientation to Calvin as an academic community in the Reformed tradition. It is taught during the fall. DCM is a first-year interim course designed to introduce students to a Reformed Christian worldview and its relevance for contemporary issues. First-year students taking a 122 language course during the interim can take a section of DCM in the spring semester. Core skills courses, such as written rhetoric or research and information technology, are best taken early in a student's career at Calvin, as they advance those skills essential to academic success at the collegiate level. The core studies are designed to introduce students to the primary domains and dimensions of life. Typically, a number of them will overlap with courses required in a student's major or professional program. The core capstone is comprised of integrative studies courses, typically taken in the junior or senior year, which draw together the broad themes of the core curriculum in connection with a particular theme or discipline. The cross-cultural engagement requirement may be fulfilled in a number of ways: Through designated off-campus interim courses; semester abroad programs; or approved semester courses at Calvin with a strong cross-cultural component.

GATEWAY & PRELUDE

- | | | |
|--|------------------|--------------|
| <input type="checkbox"/> Developing a Christian Mind | one course from: | IDIS W50/150 |
| <input type="checkbox"/> First-Year Prelude | one course from: | IDIS 149 |

CORE COMPETENCIES

- | | | |
|--|------------------|--------------------------------------|
| <input type="checkbox"/> Written Rhetoric | one course from: | ENGL 101 |
| <input type="checkbox"/> Research & Information Technology | one course from: | IDIS 110; ENGR 101 |
| <input type="checkbox"/> Rhetoric in Culture | one course from: | ART 153; CAS 101, 140, 141, 143, 214 |
| <input type="checkbox"/> Health and Fitness | | |
| Personal Fitness | one course from: | PER 101-129, PE 222 |
| Leisure and Lifetime | one course from: | PER 130-159, PE 221 |
| Skill Enhancement | one course from: | PER 160-189 |

A student participating in a varsity or junior varsity sport for a full season is exempt from the one-hour skill enhancement category.

- | | | |
|---|-----------------------|--|
| <input type="checkbox"/> Foreign Language | one of the following: | FREN 113, 123, 202; GERM 123, 202; GREE 202, 203, 205, 206, 207; LATN 202, 205; CHIN 202; JAPN 202; DUTC 202; SPAN 123, 202, 203 |
|---|-----------------------|--|

High School Exemption from Foreign Language requirement is possible.

- | | | |
|--|------------------|----------------------|
| <input type="checkbox"/> History of the West and the World | one course from: | HIST 151 or HIST 152 |
| <input type="checkbox"/> Philosophical Foundations | one course from: | PHIL 153 |

- | | | |
|--|-------------------------|--|
| <input type="checkbox"/> Physical World | one course from: | ASTR 110-112, 211, 212; CHEM 101, 103, 104, 115; GEOG/GEOL 120, 251; GEOG/IDIS 250; GEOL 151, 152; IDIS 160; PHYS 110, 113, 133, 134, 212, 221, 223, 235 |
| <input type="checkbox"/> Living World | one course from: | BIOL 111, 112, 115, 141 |
| <i>High School Exemption from Physical World or Living World requirement is possible. (Students must take 1 Science Core at Calvin).</i> | | |
| <input type="checkbox"/> Cross-Cultural Engagement | <i>To Be Determined</i> | |
| <input type="checkbox"/> Integrative Studies | one course from: | ART 395; ARTH 395; ARCT 397; BIOL 394-396; CAS 352, 399; ECON 395; EDUC 398; ENGL 395; ENGR 339, 340; ENST 395; GEOG 380, 386; HIST 395; MUSC 395; PE 332; POLS 399; PSYC 399; RECR 310; REL 301; SOC 360; SOWK 381; TWDS 395 |

Certain professional-degree programs have a modified core curriculum approved by the faculty. These include accountancy (B.S.A.), speech pathology and audiology (S.P.A.U.D.), engineering (B.S.E.), fine arts (B.F.A.), nursing (B.S.N.), recreation (B.S.R.), and social work (B.S.W.). Model programs are described within each department.

Bachelor of Arts, Bachelor of Science Degrees

The formal requirements for a Calvin College bachelor's degree include the following: Successful completion of 124 semester hours, completion of three interim courses of three credit hours or more, completion of the designated program of study and the designated core, and a minimum grade point average of 2.0 (some programs require a 2.5 GPA) both overall and in the program of concentration. Not more than 5 semester hours of basic physical education or 8 semester hours 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. No more than 8 semester hours of internship credit may be applied to graduation requirements, except when such courses are a designated part of a professional program.

Students who have completed at least 58 semester hours in biology, chemistry, computer science, the earth sciences, engineering, mathematics, and physics may elect to receive a Bachelor of Science degree.

Students desiring to earn a second baccalaureate degree from Calvin College must meet all of the requirements of the second degree and complete a minimum of 145 semester hours.

Interim Courses

Calvin is on a system under which students take only one three or four semester hour course during the three-week January term, commonly called *Interim*. Most Interim classes meet mornings or afternoons, but those involving laboratories and in-service experiences may require full-day participation. Because of their informal and intensive nature, most Interim courses have enrollment limits. To meet requirements for a Calvin degree, students must complete at least three Interim courses (a course, to meet the interim requirement must be at least three semester hours). Transfer students must complete one Interim course for each year in attendance at Calvin. Students may not take more than two Interim courses in a single department. Interim courses are graded honors (H), satisfactory (S), or unsatisfactory (U), except those courses that satisfy core requirements and other specially designated courses, which are graded in the conventional A–F system. A small number of one semester hour P.E. courses are also offered during interim. One of these may be taken in addition to the required three semester hour course. See page 27 for an explanation of these grading systems.

Calvin College is associated with a number of similar colleges with January interim programs, making possible the exchange of students during the interim. Information is available from the Director of Off-Campus Programs.

Members of the community who are not enrolled as students in any college are invited to register as visitors in interim classes if the permission of the instructor is given. Formal 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 \$55, which includes campus parking privileges. This invitation to visitors extends to off-campus interim courses. However, professors leading off-campus courses give first priority to student enrollment; if space is available, visitors may register for the course and pay the costs associated with the off-campus interim and an additional administrative fee of \$275.

Programs of Concentration (Majors and Minors)

Majors. 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 advisor and the completion of a declaration form. Once a declaration form is completed, a student may access a copy of their Academic Evaluation Report, which details the student's remaining academic requirements. Whenever students change their major, they must again submit a declaration 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 at least 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 average of "C" (2.0) in the 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 49. Group majors designed for teacher certification programs are described in the Education section.

Students may also initiate interdisciplinary (IDIS) programs of concentration other than those formally approved by the faculty. Such majors require a minimum of twelve courses, ten of which must be from two disciplines with no fewer than four from either. At least two of the courses in each discipline must be advanced courses. The remaining two courses

needed to meet the twelve-course minimum must be chosen from a third discipline. Students must provide a written rationale for such programs, indicating how the chosen disciplines relate to each other and how the proposed course requirements constitute a coherent field of study. Such proposals require the approval of the registrar and of the chairs of the departments from which the ten courses are selected. IDIS forms are available in the registrar's office and replace the Declaration of Major/Minor form.

Minors. Optional six-course departmental minors and group minors are possible in certain fields. A "C" (2.0) average in the minor program courses is required for graduation in them. Most of the minors are described in the departmental sections of the catalog. The group minor in environmental studies is included under the Department of Geology, Geography, and Environmental Studies; that in journalism, under the Department of English; that in German studies, under the Department of German; and that in missions, under the Department of Religion; the interdisciplinary minor in Third World Development Studies is described on page 242; the Group Minor in Asian Studies minor is described on page 59; the Group Minor in Archaeology is described on page 50; the Interdisciplinary Minor in Gender Studies is described on page 140. Only those minors described in the Teacher Education Programs section are approved for teacher certification. No more than one course, which is part of a minor may overlap with courses taken to meet core requirements. Group minors require the written approval of the designated advisor.

Overlap between major and minor (or supplementary) concentrations. A student's major and minor (or supplementary) concentration shall consist of at least fourteen distinct courses of three semester hours or more; moreover, when some courses may apply toward both concentrations, no more than two courses shall be counted as satisfying the requirements of both the major and minor (or supplementary) concentrations. This policy has the following implications:

| <i>Courses required in the major</i> | <i>Maximum overlap permitted</i> | <i>Minimum # of distinct courses required</i> |
|--|--------------------------------------|---|
| 8 | 0 | 14 |
| 9 | 1 | 14 |
| 10 | 2 | 14 |
| 11 or more | 2 | 15 or more |

Overlap between two majors. A double major, i.e., two college recognized major concentrations, shall consist of a minimum of sixteen distinct courses of three semester hours or more. When some courses may apply toward both concentrations, no more than three courses shall be counted as satisfying the requirements of both major concentrations. This policy has the following implications:

| <i>Total courses in two majors</i> | <i>Maximum overlap permitted</i> | <i>Minimum # of distinct courses required</i> |
|--|--------------------------------------|---|
| 16 | 0 | 16 |
| 17 | 1 | 16 |
| 18 | 2 | 16 |
| 19 | 3 | 16 |
| 20 or more | 3 | 17 or more |

Overlap between minors. There may be no overlaps between minors.

Special Academic Programs

The Academic Writing Program

Minimum Grade in English 101. As the first step in developing competence in writing, a minimum grade of “C” is required of all students receiving credit for English 101.

Departmental Writing Programs. All students will meet Writing Program requirements through a departmental writing program.

Group Majors. Departments that established departmental writings programs will include provisions for their group majors. When students initiate a group major other than those formally approved by the faculty, they must include plans for meeting the Writing Program requirements. Students should obtain approval for such plans from their major advisors and the director of the Writing Program.

Transfer Students. Students who transfer into a major program should work with their major advisor to determine what they must do to satisfy Writing Program requirements.

The Access Program

The Access Program provides an alternative entry into Calvin College for those students who do not meet admission standards, but whose records indicate that they could develop into successful college students. Admission into this program is determined by the Committee on Admissions and is based on high school grades, high school course work, ACT/SAT I scores, and recommendations. Enrollment, by means of this program, is limited each year to a specific number of first-year students.

After a student has been selected to be part of the Access Program, placement tests in English and mathematics are given to determine whether review course work is necessary in either or both areas. All Access students are required to take ASC 006: College Thinking and Learning. This course, a 2 semester hour, non-credit course, is taken concurrently with a reading-lecture course in which the student learns to apply what is taught in ASC 006.

Students in the Access Program are assigned to special academic advisors who are familiar with the program requirements and the methods by which academic progress can be attained. Typically, Access students are very involved in the program during their first semester; additional follow-up may occur during the second semester. Please see more information under *Office of Student Academic Services* on page 18 and *Academic Services* on page 49, or visit our website at: <http://www.calvin.edu/academic/sas>.

The Adult and Continuing Education Program

Adults who wish to begin a college program or return to college courses may enroll under the classification of ‘Adult Learner’. This classification includes:

1. Adults with no prior college experience and at least a four year interruption in education since high school.
2. Adults transferring into Calvin College who have a combination of course work and work experiences equivalent to four years of activity since high school.
3. Post baccalaureate students returning for a second degree or a set of course work related to their emerging interests and commitments.

Adult learners seeking to complete a degree from Calvin College must fulfill requirements for a major and for liberal arts core courses. At least 25% of the semester hours required for graduation and a minimum of three courses in the designated major must be completed at Calvin College.

Adult Learners who enter or return to Calvin with 57 credits or less must complete the new Adult Learner Core Curriculum. Under the new core curriculum, Adult Learn-

ers will be required to complete one course in each of the following areas: Developing the Christian Mind or Biblical/Theological Studies II, Global/Historical Studies or Foreign Language Competency, Written Rhetoric, Rhetoric in Culture, History of the West & the World, Philosophical Foundations, Biblical/Theological Foundations I, Persons in Community, Societal Structures in North America, Literature, The Arts, Mathematics, Natural World (Physical or Biological Science), a Capstone Course, and an approved Cross-cultural engagement.

Adult Learners entering or returning to Calvin with 58 or more credits must complete the following liberal arts core requirements at Calvin College or through transfer credit. These requirements include one core course each in history, philosophy, and religion, plus an additional course from any of the departments or Interdisciplinary W10, Christian Perspectives on Learning; a mathematics course; a course in the natural sciences; two courses from economics, political science, psychology, or sociology (with no more than one course from one department); a literature course taught in English; a course from art, communication arts, foreign literature and culture, or music; a fine arts course; a course in written rhetoric; and a course in spoken rhetoric. If a student has not completed a foreign language through the second year college level, then a foreign culture course must be taken to fulfill the fine arts core course requirement.

NOTE: Certain programs and majors do not allow this modified liberal arts core as fulfilling graduation requirements. For example, Adult Learners in the teacher education program and the nursing program must fulfill the liberal arts requirements specific to those programs. Adult Learners should seek the advice of an academic advisor from their program or major early in their enrollment at Calvin.

Adult Learners may also obtain credit through the development of a prior learning portfolio. The portfolio provides a means for adult learners to petition for college credit based on prior learning through work or volunteer activities. Students must write essays and supply documentation when petitioning for prior learning credit. Normally, one to four semester hours may be granted for each essay and appropriate documentation. A total of 16 semester hours may be obtained through the prior learning portfolio.

Students seeking classification as an Adult Learner should indicate this when they complete their admission forms. Questions about the Adult Learner classification may be directed to the Office of the Registrar.

The Honors Program

Calvin College offers special opportunities for students of outstanding academic ability throughout their undergraduate education. The Honors Program is intended to provide for the discovery, nurturing, and rewarding of academic excellence, and to prepare outstanding students for leadership in service to the immediate community and the world at large.

Incoming students are automatically invited to participate in the Honors Program if they have an ACT composite score of 28 or higher. Current students whose cumulative GPA at Calvin is 3.3 or higher are also eligible to participate. Other students may apply to the director with a personal statement of interest, a current transcript, and ACT test scores.

Students in the Honors Program may register for special honors sections of core courses, contract with a professor to take a regular course for honors credit (for which extra work is required), seek exemptions from core requirements by examination, propose cross-disciplinary programs of concentration, and participate in various extracurricular events for honors students. Honors classes generally assume a high level of motivation and initiative on the part of the student, and aim at greater depth of learning than a regular class.

To graduate with honors, students must complete at least six honors courses (a minimum of eighteen semester hours with at least two of these courses in their major), maintain a GPA of at least 3.3, and fulfill any other conditions established by the department in which they major. These departmental requirements are spelled out in the *Honors*

Program Handbook, available on the website. Regular interim courses with honors grades are not considered honors courses. Students must apply for admission to the departmental honors program in their major after completing at least two honors courses in the general curriculum and earning a cumulative GPA of 3.3 or higher. They must also submit an “Application to Graduate with Honors” by February 15 of their senior year.

For further information, contact the Director of the Honors Program, K. Bratt (Classics Department), or see the web page at www.calvin.edu/academic/honors/.

Professional-degree programs

Information regarding professional-degree programs can be found in the department under which they fall in the Academic Departments/Courses section of the catalog.

Pre-professional Programs

The programs in this section prepare students for admission to professional and graduate schools while also meeting the requirements for a Bachelor of Arts or Bachelor of Science degree from Calvin.

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 pages 33–36. The pre-law advisor, C. Pollard, of the Department of English, can advise students on suitable electives and can help them plan programs, which provide good preparation for law school. Pre-law students should declare their interest in law at registration time and they should also plan to attend one of the pre-law information sessions held at the beginning of the fall semester.

Medicine and Dentistry

Students planning to enter the pre-medical or pre-dental programs should consult P. Tigchelaar, of the Department of Biology, faculty advisor for the pre-medical and pre-dental programs. Students should also note the general college core requirements on pages 33–36.

A student may select any major concentration and still meet the entrance requirements for all medical and dental schools. However, nationwide the majority of the applicants to medical and dental schools are science majors.

For those students not majoring in biology, the minimum science requirements for entrance into nearly all medical or dental schools are met by the following: Three courses in biology (which should be selected in consultation with the pre-medical advisor); Chemistry 103-104, 261-262 (Chemistry 323 is required by some schools); and Physics 221-222 or the equivalent. Mathematics 132 and 143 are recommended, but Mathematics 161-162 is required by some medical schools.

Because a few schools have unique requirements, students should consult with P. Tigchelaar to determine specific requirements of the schools to which they intend to apply.

Pre-medical and pre-dental students normally 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.

Ministry

The Association of Theological Schools (A.T.S.) recommends that pre-seminary students develop the ability to think, communicate, and do independent research. As well, pre-seminary students should learn about human culture and society, and they may develop proficiency in biblical languages, Latin, and modern languages. Pre-seminary students should consult the catalogs of the seminaries that they intend to enter for specific admission requirements. Pre-seminary students should direct any questions to the advisor of all pre-ministry programs, D. Crump, of the Religion Department.

To qualify for admission to Calvin Theological Seminary, students must meet all of the seminary's requirements for a bachelor's degree, as well as the admissions requirements of the seminary, including a minimum grade point average of 2.67. Calvin Theological Seminary recommends that pre-seminary students emphasize the following areas of study: Classical civilization, English, Greek, history, philosophy, psychology, sociology, and theology.

Calvin Seminary's Master of Divinity (M. Div.) program prepares persons for ordination. To enter the Master of Divinity program, pre-seminary students must complete the following courses:

- Language: At least two years of Greek
- Humanities: A total of at least 24 semester hours (8 courses) in English, history, and philosophy, with at least two semester-length courses each in literature, history, and philosophy (preferably history of philosophy)
- Natural science, social science, and speech: At least two courses in each

Calvin College students should include the following courses in their programs: Greek 205-206; Philosophy 251 and 252; and Communication Arts and Sciences 100 or 101 and 200. Communication Arts and Sciences 203 and 240 are recommended.

Calvin Seminary's Master of Arts in Educational Ministry program prepares persons for positions of leadership in the church that do not require ordination, particularly in educational ministry. The courses required for admission are generally met by the college graduation requirements, with the addition of two courses from education and psychology, including a course in education psychology.

Calvin Seminary's Master of Arts in Missions and Church Growth program prepares persons for leadership in professional settings such as missions and para-church organizations. Admission requirements are generally met by Calvin College graduation requirements, but students must complete at least three courses in the social sciences, one of which must be in Social or Cultural Anthropology.

Calvin Seminary's Master of Theological Studies program provides a theological education that emphasizes vocational objectives for students who are not seeking ordination. Specific requirements beyond those required for graduation from the college include four courses in Greek; competence in a modern foreign language through the second-year college level is recommended.

Professional Combined-Curriculum Programs

Occupational Therapy

Preparation for entrance into the field of Occupational Therapy (OT) requires earning a B.S. or M.S. degree in Occupational Therapy, completing a six-month internship, and passing a national board examination. Admission into a B.S.O.T. program requires a minimum of two years of undergraduate college credits, including certain specified courses determined by the school offering the degree. Admission into a M.S.O.T. requires a college degree with any major so long as certain specified courses are taken. Admission to either type of program also requires work experience in O.T., which can be arranged through the Service-Learning Center at Calvin.

Because the specific courses required for admission to occupational therapy are des-

ignated by the school offering the degree, the student should obtain a list of these required courses from each school to which they intend to apply. This step can be completed after arriving at Calvin and learning which schools offer O.T. programs. Before registering for classes, a schedule for each student is arranged in consultation with the pre-occupational therapy advisor, R. Nyhof, of the Biology Department.

Calvin College offers a 3-2 combined curriculum program with the Program in Occupational Therapy, Washington University School of Medicine in St. Louis, Missouri. A student participating in this program would spend three years at Calvin College taking the specific courses listed below, apply for acceptance into the program at Washington University, and if accepted, transfer to Washington University for the two clinical years. Upon successful completion of the first year, the student would receive a Bachelor of Science in Letters and Occupational Therapy from Calvin College and a M.S.O.T. from Washington University upon successful completion of the program. Although this program requires five years to complete, the student would receive a Masters degree from Washington University. A student applying from Calvin will receive preferential status in his/her application.

The three-year program at Calvin includes the following requirements:

- Developing a Christian Mind Gateway Course
- Art 215
- Biology 141, 205, and 206
- Chemistry 115
- Communication Arts and Sciences 101
- History 151 or 152
- Philosophy 153
- Religion 121 or 131
- Religion 211-214 or 221-224
- Interdisciplinary 149 and Interdisciplinary W50/150
- Economics 151 or Political Science 101
- English 101 (with Interdisciplinary 110) and one course in literature
- Foreign language, through the second year college competency
- Mathematics 143 or Psychology 255
- Music 103, 106, 236, or 238
- Physical Education: 3 activity courses
- Physics 223
- Psychology 151, 201, and 212
- Sociology 151 and 153

Pre-professional transfer programs

Architecture

Various courses of study may be pursued as preparation for a professional degree in architecture, because of the broad nature of a profession concerned with design, history and culture, and the social and technical sciences. Although Calvin College offers no degree in architecture, a student can focus individual gifts and abilities within the architectural field by taking a liberal arts undergraduate program in art, art history, business, communications, engineering, geography, history, philosophy, environmental science, sociology, political science, or other related fields. Any one of these programs, with carefully chosen electives, can prepare the student for entry into a graduate program for the master of architecture as a first professional degree. Four years of high school math is recommended, since at least one course in Calculus and Physics 221 and 222 are required. A student may also choose to take a two-year program and transfer into a school of architecture. In either case, the student should plan on six to eight years of formal

education followed by an internship. Students interested in such a program should consult with C. Young of the Department of Art. The first two years typically include:

| <i>First year</i> | <i>Semester hours</i> |
|---|-----------------------|
| Art 153 | 3 |
| English 101 | 3 |
| Engineering 103 | 4 |
| Mathematics 161 and 162 | 4 |
| Economics 151 or 221 | 3 |
| Religion core | 3 |
| Physical education | 1 |
| <i>Second year</i> | <i>Semester hours</i> |
| Architectural History 201, 202, and Art Studio 250 | 11 |
| Chemistry, if none in high school; biology; or psychology | 3–4 |
| Physics 133/134 or 221 and 222 | 8 |
| Literature core | 3 |
| Philosophy 153 | 3 |

Natural Resource Programs

Students interested in stewardship of God's creation can complete degrees in Resource Ecology, Policy and Management, and Resource Institutions and Human Behavior.

Resource ecology requires students to become proficient in biology, physical sciences, mathematics, and computer science. Students considering careers in researching fisheries, wildlife, and forestry should complete a biology concentration at Calvin, while also fulfilling graduate school requirements. Students should consider graduate education in Natural Resources to increase their employment options.

Resource policy and management requires students to become proficient in economic theory, management skills, social sciences, communication skills, and political institutions. This emphasis is appropriate for students who seek careers in management of resources (forestry, fisheries, and wildlife management), planning (landscape architecture), or policy (resource economics, policy, advocacy, education, and communication). Landscape architecture requires completion of courses in design, graphics, engineering, and planning.

Resource institutions and human behavior requires students to become proficient in social and behavioral sciences, learning how individual, group, and institutional behavior affects the use and allocation of natural resources.

Students follow one of two paths to gain professional competence in the Natural Resources, in any of the above fields: 1) Completion of a Bachelor's degree at Calvin followed by graduate study or 2) After two years of study at Calvin and then transfer to a professional program elsewhere. Transferring after two years is suggested for students interested in resource policy and resource management. Students who expect to transfer should complete the first two years of the Biology major, one year of mathematics, one year of chemistry, and as many courses in computer science and economics as possible.

Students interested in these areas should consult D. Warners, of the Biology Department, early in their college careers.

Optometry

Students wishing to become optometrists may complete three to four years at Calvin before entering optometry school to complete four additional years of study culminating in the Doctor of Optometry (O.D.) degree. Most optometry schools now prefer that transfer students complete a B.A. or B.S. degree before entering optometry school. Requirements of the various schools vary, but all require the following:

| | <i>Semester hours</i> |
|--|-----------------------|
| Biology 141 and 242 | 8 |
| Biology 207 or 336 | 4 |
| Chemistry 103 and 104 | 8 |
| Chemistry 261 and 262 or 253 | 5-10 |
| Physics 221 and 222 | 8 |
| Mathematics 132 or 161 | 4 |
| Mathematics 143 | 4 |
| English 101 and a literature course | 6 |
| Social Science (Psychology 151, Sociology 151) | 3-6 |

Many schools also recommend physiology, anatomy, biochemistry, and a business or economics course. These requirements may be met within the context of a biology major or group science major at Calvin College. Students should consult the website of the Association of Schools and Colleges of Optometry (www.opted.org) and work with the pre-optometry advisor, J. Ubels, to plan a course of study that meets the requirements of the optometry schools to which they intend to apply. All applicants to optometry school are required to take the Optometry Admission Test (OAT), which is offered each year in October and February. Application deadlines at the various optometry schools range from January 1 to April 1.

Pharmacy

Students interested in a career in pharmacy will complete two to three years at Calvin College before transferring to a college of pharmacy to complete four additional years of study culminating in a Doctor of Pharmacy (Pharm.D.) degree. Pre-pharmacy requirements of the various pharmacy schools vary greatly. As an example, the courses required by the Ferris State University College of Pharmacy in Big Rapids, Michigan are shown below:

| | <i>Semester hours</i> |
|---|-----------------------|
| Biology 141 and 242 | 8 |
| Biology 207 | 4 |
| Chemistry 103 and 104 | 8 |
| Chemistry 261 and 262 | 10 |
| Mathematics 132 or 161 | 4 |
| Mathematics 143 | 4 |
| English 101 and 201 or 205 | 6 |
| Economics 151 | 3 |
| Communication Arts and Sciences 101 or 240 | 3 |
| Psychology 151 or Sociology 151 | 3 |
| Art, Music, History, Literature, Philosophy, Religion | 9 |

These courses may be completed in two years; however, other schools may require courses in anatomy, physiology, and physics, which could increase the length of the pre-pharmacy program to three years. Students should consult the American Association of Colleges of Pharmacy website (www.aacp.org) and work with the pre-pharmacy advisor, J. Ubels, to plan a course of study appropriate for the pharmacy schools to which they intend to apply. Most pharmacy schools require the Pharmacy College Admission Test (PCAT), which should be taken in the fall semester of the student's final year at Calvin.

Physical Therapy

Students wishing to enter the field of Physical Therapy (PT) must complete a master's degree in Physical Therapy (M.S.P.T.). Students at Calvin College can prepare to com-

plete this degree in three ways. First, students may complete a minimum of two years of prerequisite courses at Calvin (prerequisite courses are described later) and then transfer to a professional school to earn the M.S.P.T. degree. Second, students may complete three years of prerequisite courses at Calvin before being accepted into a professional school program, reducing their time in the professional program by a year. Third, students may complete the prerequisite courses in conjunction with a degree program in any discipline. Students then attend graduate school. Because admission to graduate programs in Physical Therapy is very competitive, students are frequently advised to choose the third option; the third option will lead to a degree in addition to completing the prerequisite courses.

The prerequisite courses depend on the graduate school to which students wish to apply; therefore, students should obtain a list of requirements for each of the schools to which they plan to apply. Below is a sample list of prerequisite classes for non-Biology majors. Students are encouraged to contact the advisor of the pre-physical therapy program, R. Nyhof, of the Biology Department, before they register for classes.

First Year

Fall Semester

Biology 205
Chemistry 103
Core courses

Spring Semester

Biology 141
Chemistry 104
Core or major concentration courses

Third Year

Fall Semester

Physics 221
English 201
Core or major concentration courses

Spring Semester

Physics 222
Core or major concentration courses

Second Year

Fall Semester

Biology 206
Chemistry 253 (offered alternate years)
Psychology 151
Core or major concentration courses

Spring Semester

Mathematics 143
Psychology 201
Core or major concentration courses

Physician Assistant

Students who would like to practice medicine under the supervision of a licensed physician should consider becoming a Physician Assistant (PA). A Physician Assistant can record medical histories, perform physical examinations, make diagnoses, counsel patients, order and administer laboratory tests, assist in surgery, set fractures, and, in some states, prescribe drugs.

Each graduate program determines their prerequisite courses, and since there is so much variability from one program to another, Calvin College does not offer a specific program for students who want to prepare for a career of Christian service as a Physician Assistant. Students who desire to pursue a career as a Physician Assistant should contact either P. Tigchelaar or R. Nyhof for advice about preparatory courses and hours of direct patient care required by particular clinical training programs.

Academic Departments and Courses

Description of courses offered by the various departments

The symbols F (Fall), I (Interim), S (Spring), and SS (Summer Session) indicate when each course is offered. The term core designates those courses in each department that meet the general graduation or core requirements of the discipline. The credit (semester hours) for each course is indicated in parentheses after the course name. **Interim courses are listed after the department course listings. A separate Interim course catalog with full course descriptions will also be available October 2002.**

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 (**).

Academic Services

J. MacKenzie (director), L. Bosch (international student advisor), K. Broekstra (coordinator of services to students with disabilities), R. Buursma, J. DeBoer (assistant coordinator of services to students with disabilities), A. Granderson (academic counselor), J. Heerspink (tutor coordinator), B. Morrison, M. Vriend (assistant coordinator of services to students with disabilities)

Student Academic Services courses (ASC) provide supplementary training and assistance in English, mathematics, and college-level thinking and learning skills. Class size and schedules 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. Non-credit courses appear on student transcripts with grades, but do not carry honor points. Failure to complete a prescribed Academic Services course (ASC) with the required grade may make a conditional student or a student on probation subject to dismissal. Students normally register for a total of twelve to fourteen semester hours including any required non-credit courses. Please see additional information under Office of Student Academic Services on page 18 and The Access Program on page 39, or visit our website at: www.calvin.edu/academic/sas.

COURSES

003 Review of Written English as a Second Language (3). F and S, no credit. This course provides instruction and extensive practice in written English for students whose native language is other than English. It includes grammar study, vocabulary development, and reading practice. Students are assigned to this course on the basis of scores on the locally administered placement test of English Language Proficiency, which is administered again at the end of the course. Enrollment in English 101 the following semester will require a minimum score of 85 on the locally administered placement test and the recommen-

ation of the ASC 003 instructor and the English Department. *L. Bosch.*

004 Pre-college Mathematics for the Liberal Arts Students (3). F and S, no credit. This course is 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 development of mathematical thinking and problem solving. The course is designed to bring students to the level of competence needed for ASC 005, Mathematics 100, Mathematics 143, Mathematics 221, Economics 151, Astronomy 110, Biology 111,

Chemistry 110, Physical Science 110, and other core courses. *J. MacKenzie, Staff.*

005 Pre-college Mathematics for the Business and Science (3). F and S, no 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 143/132 or 110 for students in mathematics-oriented majors, whose preparation in mathematics is inadequate. *Staff.*

006 College Thinking and Learning (2). F and S, no credit. Serving in God's kingdom requires knowledge, understanding, and critical inquiry. ASC 006 assists students in de-

veloping strategic approaches to course work and encourages attitudes and habits integral to this learning process. Students will particularly apply the learning strategies to a course in which they are concurrently enrolled, such as history, political science, psychology, or religion. A final grade of "C" or higher in ASC 006 is required for successful completion of this course. *R. Buursma, J. Heerspink, A. Granderson.*

007 Pre-college Grammar and Composition (2). F and S, no credit. This course provides instruction in grammar and writing and is intended as preparation for English 101, which must be taken the subsequent semester. Students who are required to take this course in order to be admitted to English 101 must pass it with a grade of "C" or higher. *B. Morrison.*

Archaeology

The minor in archaeology may be taken in conjunction with any major. It is designed to serve both those students who wish to study archaeology out of extra-vocational interest and those who wish qualification for graduate programs in archaeology. Students interested should seek faculty advice as specified below.

Group Minor in Archaeology

Interdisciplinary 240

Interdisciplinary 340

Twelve semester hours from the following:

Architectural History 201

Art Studio 250/300

Art History 101, 241, 243, 245, 393

Biology 323, 346

Computer Science 152/363

Classics 221

Engineering 101, 103

Geography 220, 320

Geology 151, 152, 311, 313/Biology 313, Geology 314, 321

Greek 101/102

Hebrew, Ugaritic, Aramaic, Coptic (at Calvin Theological Seminary)

History 231, 232, 235, 238, 241, 245, 261, 338, 393

Latin 101/102

Religion 311, 321

Sociology 153, 253, 308

One Interim course, with archaeological focus

Students may select a coherent sequence of four elective courses appropriate to their major and to their plans for further study with the approval of an advisor in the minor program. Sample programs in Old World Archaeology, New World Archaeology, and specialized fields such as Architectural Drawing in Archaeology are available. Language requirements for advanced work in archaeology vary. There are no language requirements for the archaeology minor, but students should consider plans for future work and study in completing college language requirements. For Old World archaeology, the best modern language choice is either French or German, while Spanish is useful for New World archaeology.

Supervising and Advising

The group minor in archaeology is administered by an inter-departmental committee, the Archaeology Minor Committee. The members of the committee in 2002-03 are B. de Vries (History), Program Coordinator, K. Bratt (Classics), R. Stearley (Geology), K. Pomykala (Religion), C. Young (Art), and T. VandenBerg (Sociology).

Interested students should consult a member of the Archaeology Minor Committee for selection of the specific courses for the minor.

COURSES

IDIS240 Introduction to Archaeology (3). A classroom introduction to archaeology with emphasis on archaeological theory, field work methods, artifact processing, and data interpretation. The course is designed to introduce students to the theoretical concepts of archaeology, participation in field work, and the critical reading of archaeological reports in both the Old World and New World archaeology. It serves as a prerequisite for Interdisciplinary 340. Next offered Fall 2003. *B. de Vries.*

IDIS340 Field Work in Archaeology (3-6). SS. Offered in conjunction with field work done by Calvin faculty. An on-site introduction to archaeological field work designed to expose the student to the methodologies involved in stratigraphic excavation, typological and comparative analysis of artifacts, and the use of non-literary sources in the written analysis of human cultural history. Also listed as History 380. Prerequisites: Interdisciplinary 240 and permission of the instructor. *B. de Vries.*

Art

*Professors **A. Greidanus Probes, C.J. Huisman (chair), H. Luttkhuizen, F. Speyers, C. Young*

Assistant Professors K. Dane, J. Steensma Hoag, J. Van Reeuyk
Instructor E. Van Arragon

Calvin's art department offers both Bachelor of Arts and Bachelor of Fine Arts degrees. Students opting for a Bachelor of Arts degree may choose from the major concentrations of studio art, art history, and art education. The department also offers minors in the above concentrations.

The Bachelor of Fine Arts (B.F.A.) program, which has a greater professional emphasis is described in greater detail below. The program advisor is A. Greidanus Probes. Both the B.A. and the B.F.A. programs can be planned to provide a communication design or photography emphasis.

Visual Arts (B.F.A.)

Students who are interested in the Bachelor of Fine Arts degree (B.F.A.) program at Calvin should consult with A. Greidanus Probes of the Department of Art, faculty advisor for the B.F.A. program.

Before applying for admission to the program, a student must have completed three studio art courses in college. Application forms and information on requirements for admission are available in the Art Department office. Submit applications by the first Wednesday in October or the first Wednesday in March.

A student wishing to obtain a B.F.A. degree in art must successfully complete 124 semester hours, including three interim courses, the regular liberal arts core requirements, with the *exception* of the foreign language requirement, and a prescribed program of concentration. (See pages 33-36 for core requirements).

| | |
|--|----------------|
| Program of Concentration: | 63 hrs. |
| Art 153 | 4 hrs. |
| Art History 101 or Architectural History 201 | 4 hrs. |
| Art History 102 or Architectural History 202 | 4 hrs. |
| Art History 238, 239, or 240 | 3 hrs. |
| One Art History Elective | 3 hrs. |
| Five Introductory Studio Courses from: | |
| Art Studio 250, 251, 255, 256, 257, and 258 | 15 hrs. |
| Four Intermediate Studio Courses from: | |
| Art Studio 300, 301, 305, 306, 307, 308, and 316 | 12 hrs. |
| Three Advanced Studio Courses from: | |
| Art Studio 350, 351, 355, 356, 357, 358, and 380 | 9 hrs. |
| Two Electives from Art Studio or Art History | 6 hrs. |
| Art Studio 395 | 3 hrs. |
| Recommended Cognate: | |
| Philosophy 208 | |

STUDIO ART MAJOR

Art 153
 Art History 101 or Architectural History 201
 Art History 102 or Architectural History 202
 Two Intro Studio Courses
 Two Intermediate Studio Courses
 One Advanced Studio Course
 One Art History or Studio Elective
 Art Studio 395

STUDIO ART MINOR

Art 153
 Art History 101 or Architectural History 201
 Art History 102 or Architectural History 202
 Two Intro Studio Courses
 One Intermediate Studio Course
 One Studio Elective

ART HISTORY MAJOR

Art 153
 Art History 101 or Architectural History 201
 Art History 102 or Architectural History 202
 Art History 232 or 233 or Classics 221
 Art History 234 or 235 or 237
 Art History 238 or 239 or 240

Art History 241 or 243 or 245
 Two Art History Electives
 Art History 397 or Architectural History 397

Recommended Cognates

Philosophy 208
 Second Foreign Language

ART HISTORY MINOR

Art 153
 Art History 101 or Architectural History 201
 Art History 102 or Architectural History 202
 Art History 232 or 233 or Classics 221
 Art History 234 or 235 or 237
 Art History 238 or 239 or 240
 Art History 241 or 243 or 245

ART EDUCATION GROUP MAJOR (K-12)

Art 153
 Art Studio 250
 Art Studio 255 or 256
 Art Studio 257 or 258
 Art Studio 251
 Two approved Art Interim courses

Five studio art electives (including two advanced courses and not used in other parts of this major and accompanying minor)

ART EDUCATION MINOR IN ART STUDIES (K-12)

Art Education 215 and 216
Art History 101 and 102
Art History 238, 239, or 240
Art History 241, 243, or 245
Philosophy 208

This minor must be taken by all secondary K-12 art majors.

Prior to the teaching internship, students must have the approval of the department. Criteria for approval are found in the *Teacher Education Program Guidebook*, available in the Education Department.

Students must have earned a grade of “C” (2.0) or better in Art 153 before applying for admission to the studio art and art education programs.

ELEMENTARY EDUCATION FINE ARTS GROUP MAJOR AND MINOR

All Fine Arts Group Majors must complete at least 36 semester hours of courses in Art, Music, and Communication Arts and Sciences. All minors must complete at least 24 semester hours of courses in these three areas. All majors and minors must take Art 215; Communication Arts and Sciences 214; and Music 238. In addition, students majoring in Fine Arts must complete a sequence of courses from two of these disciplines chosen in consultation with a fine arts education advisor. Students minoring in fine arts must complete a sequence of courses from one of these disciplines and some additional electives chosen in consultation with a fine arts advisor. Fine Arts Advisors: J. VanReeuwijk, Art; R. Buursma, Communication Arts and Sciences; and D. Topp, Music.

COURSES

151 **Introduction to Art** (3). F and S. A survey of art, artists, and art criticism. Introductory studio activities are planned to acquaint the student with composition in art. Tests, papers, and audio-visual presentations, lectures, and readings related to the purpose and nature of art and art criticism. Not part of an art major program. Last year offered. C. Huisman.

153 **Visual Culture** (4). F and S. An introduction to the function of visual images as tools of persuasive communication. This course will better equip students to communicate effectively with visual images and critically examine their various uses in contemporary culture. Intended for first- and second-year students only. *Staff*.

Art Education

215 **Introduction to Elementary Art Education** (3). F and S. This course is an introduction to image-making and to various methods of teaching art at the elementary-school level. The course includes lectures, studio projects, demonstrations, and art teaching experiences with children from area schools. Students must be currently enrolled in either the elementary education program or the recreation program to receive core credit. Open to first-year students only by permission of the instructor. J. Van Reeuwijk.

216 **Secondary Art Education** (3). F This course introduces students to various methods of teaching art in the secondary school and to professional standards in art education. It will also guide prospective teachers in developing a responsible pedagogical approach that they can call their own. To foster great socio-historical understanding, throughout this course, the function of visual images will be addressed in relation to their cultural setting. This course includes lectures, studio projects, demonstrations, and art teaching experiences with students from area schools. Prerequisites: Art 153, Education 301/303. J. Van Reeuwijk.

359 **Seminar in Principles and Practices in Art Teaching** (3). S. A course on principles and practices in the teaching of visual culture on the elementary and secondary levels. This course should be taken concurrently with

Education 319. Students must be admitted into Directed Teaching by the Art and Education departments prior to enrollment. *J. Van Reeuwijk*.

Studio Courses

250 Introduction to Drawing (3). F and S. An introduction to drawing media. This course teaches the basic understanding and use of drawing materials and techniques through the construction of visual problems and solutions related to pictorial space (line, shape, value, volume, scale, composition, and perspective). Students will be expected to produce visually effective drawings through control and execution of the media. Visual, conceptual, and technical concerns will be reinforced through readings, discussions, demonstrations, and critiques. This course will address the use of drawing, not only as a means of developing observational skills, but also that of practicing critical and visual discernment. Materials fee. Prerequisite: Art 153. *K. Dane*.

251 Introduction to Painting (3). * F and S. An introduction to the painting medium. This course initiates technical and visual problems and solutions related to the study of painting (color, form, shape, and composition), as well as an investigation of adjoining critical issues that include perception, representation, likeness, and facture. Students will be expected to produce visually effective paintings through control and execution of the media. This course addresses critical issues surrounding the production of painted images, the tradition of painting, and the use of painting as a means of developing observational skills, as well as critical and visual discernment. Visual, technical, and conceptual concerns will be reinforced through readings, discussions, demonstrations, and critiques. Materials fee. Prerequisite: Art Studio 250. *K. Dane*.

255 Communication Design I (3). * F and S. An introduction to the image-based software as a problem-solving approach to Internet oriented communication design. Emphasis is on developing and integrating visual acuity with software dexterity in order to communicate with meaning and purpose. Typography, illustration, and photography are integrated to develop visual problem-solving skills. Selected projects are designed to de-

velop visual understanding and encourage critical discernment. Materials fee. Prerequisite: Art 153. *F. Speyers*.

256 Introduction to Photography (3). * F and S. An introduction to basic photographic techniques and the process of black and white photography including camera operation, film processing, printing, and presentation. Course work emphasizes visual problems and solutions specific to photography, such as flatness, frame, time, and focus. The ability to produce photographic images with visual effectiveness through control and execution of the media is stressed. Visual and technical abilities will be reinforced through readings, discussions, demonstrations, critiques, and lectures. The history of photography and critical approaches to the media will be introduced and inform the context of study. Materials fee. Prerequisite: Art 153. *J. Steensma Hoag*.

257 Introduction to Sculpture (3). * F and S. An introduction to the production of three-dimensional objects through methods and technologies of sculpture. Course work emphasizes visual problems and solutions specific to sculpture including the basic components of three-dimensional form and the manipulation of space. Students will be introduced to a variety of materials such as prefabricated, found media, plaster, wood, stone, metal, and composites. Students will be expected to produce sculptural objects with visual effectiveness through control and execution of the media. Visual acuity and technical abilities will be reinforced through readings, discussions, demonstrations, critiques, and lectures. The history of sculpture and critical approaches to the media will lead to an understanding of how three-dimensional forms give shape to ideas and beliefs. Materials fee. Prerequisite: Art Studio 250. *A. Greidanus Probes, Staff*.

258 Introduction to Ceramics (3). * F and S. This course introduces students to the basic components of ceramics, including the construction of three-dimensional forms and the organization of space. Students will learn traditional and contemporary methods of working with clay and glazes. Course work addresses visual problems and solutions specific to ceramics, the texture of materials, and the manipulation of space. Visual acuity and technical abilities will be reinforced through read-

ings, discussions, demonstrations, critiques, and lectures. The history of ceramics and critical approaches to the media will lead to an understanding of how three-dimensional forms give shape to ideas and beliefs. Materials fee. Prerequisite: Art Studio 250. *C. Huisman*.

300 Intermediate Drawing (3). * F and S. A further exploration of the activity of drawing. This course emphasizes the critical engagement of visual problems and solutions through the development of a drawing portfolio. The primary source material for this course is the human figure, utilized for visual and technical investigation of pictorial space, as well as for contemporary critical issues surrounding the representation of the self and others. Materials fee. Prerequisite: Art Studio 250. *Staff*.

301 Intermediate Painting (3). * F and S. A further exploration of painting ideas and media. This course emphasizes the critical engagement of visual problems and solutions through the development of a painting portfolio. Students will be expected to participate in ongoing group and individual critiques, discussions of assigned readings, and contribute to the dialogue in a bi-weekly painting seminar. Through critical engagement of contemporary painting practices, this course initiates patterns of individual research in the production of a painting portfolio. Materials fee. Prerequisite: Art Studio 251. *K. Dane*.

305 Communication Design II (3). * F. This course focuses on dynamic, interactive interface website design. Using WYSIWYG editors, vector, bitmapped graphics and motion, and MP3 audio are integrated to produce website portals that are usable and intuitive in the visualization of their navigation. Students will learn how to use low-bandwidth, high-impact, image-based software that allows users to navigate through linear, non-linear, spatial, parallel, hierarchical, and matrix timeline structures, which lead to useful, virtual interaction. Projects are designed to construct visual interfaces, which optimize site navigation without programming. Materials fee. Prerequisite: Art Studio 255. *F. Speyers*.

306 Analogue Photography (3). * F and S. A further exploration of the visual and technical aspects of the photographic medium, with study of critical theory specific to analogue

photography. A variety of professional equipment, processes, and advanced techniques will also be introduced, including color and artificial lighting. Course work emphasizes the application of technical readings, demonstrations, and lectures through the production of effective photographic images. Photographic criticism is addressed through readings, lectures, studio assignments, critiques, and a final project. Materials fee. Prerequisite: Art Studio 256. *J. Steensma Hoag*.

307 Intermediate Sculpture (3). * F and S. A further investigation of the visual and technical aspects of sculptural media and organization of space. This course will require the production of a portfolio of sculptural objects. Special attention will be given to the use of particular production methods, issues of presentation, and the relationship between concept and process. Critical theory specific to sculpture is addressed through readings, lectures, and class projects. Materials fee. Prerequisite: Art Studio 257. *A. Greidanus Probes, Staff*.

308 Intermediate Ceramics (3). * F and S. A further investigation of the visual and technical aspects of clay, glazes, and other media. This course will require the production of a portfolio of ceramic objects. Special attention will be given to the use of particular production methods, issues of presentation, and the relationship between concept and process. Critical theory specific to ceramics is addressed through readings, lectures, and class projects. Materials fee. Prerequisite: Art Studio 258. *C. Huisman*.

316 Digital Photography (3). * S. An exploration of the visual and technical aspects of photography with an emphasis on digital media. A study of critical theory specific to digital photography will be addressed. Topics covered will include digital image acquisition, manipulation, storage, and display. Course work emphasizes the application of technical readings, demonstrations, and lecture through intensive production of digital images. Criticism is addressed through readings, lectures, studio assignments, critiques, and a final project. Materials fee. Prerequisite: Art Studio 256. *J. Steensma Hoag*.

350 Advanced Drawing (3). * F and S. This course addresses individual research and conceptual problem solving through the produc-

tion of a cohesive portfolio of drawings. Students will be encouraged to experiment with the use of new technologies and non-traditional drawing media. In addition to discussions of assigned readings, students will participate in ongoing group and individual critiques that will focus on the individual development and critical understanding of drawn images and ideas. Materials fee. Prerequisite: Art Studio 300. *A. Greidanus Probes, Staff.*

351 Advanced Painting (3). * F and S. A further investigation of painting ideas and media. This course emphasizes individual research and conceptual problem solving through the production of a portfolio of paintings. As part of this course, students will be encouraged to experiment with new technologies and non-traditional painting media supports. In addition to helping lead the bi-weekly seminar on contemporary issues in painting, students will participate in ongoing group and individual critiques that will focus on the development of images and ideas toward a cohesive painting portfolio. Materials fee. Prerequisite: Art Studio 301. *K. Dane.*

355 Communication Design III (3). * S. This course expands site portal design from narrow to broad bandwidth streaming digital imagery. Navigating within time line image frames and MP3 audio will be integrated, calibrated, and coalesced with overlapping clips in order to construct visual narratives which resonate with specific market audiences. Design work flows will be streamlined to optimize the synchronization of audio with vector and bitmapped images, with an emphasis on achieving a portal's predicated performance. Emphasis will be on personal development of technical and imaginative skills. Materials fee. Prerequisite: Art Studio 305. *F Speyers.*

356 Advanced Photography (3). * F and S. An emphasis on individual research and conceptual problem solving in the production of a coherent body of analogue and/or digital photographic work. Class time will consist of critiques on the quality of concept and presentation of idea in student images, in addition to discussions of assigned technical and critical readings. Students will be evaluated on a photography portfolio and a class presentation of their work. Materials fee. Prerequisite: Art Studio 306 or 316. *J. Steensma Hoag.*

357 Advanced Sculpture (3). * F and S. This course directs individual research in the production of a cohesive body of sculptural work. Requirements include regular critiques of works in progress and discussions of techniques and critical readings. Student portfolios will be evaluated on the basis of craft, concept, and presentation. Students will examine possible ways in which they can make contributions to the field of sculpture and visual culture. Materials fee. Prerequisite: Art Studio 307. *A. Greidanus Probes, Staff.*

358 Advanced Ceramics (3). * F and S. This course directs individual research in the production of a cohesive body of ceramic work. Requirements include regular critiques of works in progress, discussions of techniques, and critical readings. Student portfolios will be evaluated on the basis of craft, concept, and presentation. Students will examine possible ways in which they can make contributions to the field of ceramics and visual culture. Materials fee. Prerequisite: Art Studio 308. *C. Huisman.*

380 Internship in Communication Design (3). F and S, tutorial. A practicum in which students work ten hours per week for one semester under an employer supervisor and participate in a series of internship seminars. Students apply theoretical, ethical, and technical aspects of graphic design or photography to specific problems in visual communication. Personal journals, assigned art projects, and regular meetings with the supervising instructor are required. To enroll in this course, students must submit a written proposal to the chair for approval. Prerequisites: Five studio art courses and departmental approval. *F Speyers.*

385 Internship in Visual Studies (3). * F and S, tutorial. A practicum in which students work a minimum of ten hours per week for one semester in an art-related field under the supervision of a studio artist, professional designer, or gallery director. Students will also meet regularly with an instructor on campus to address lessons learned. To enroll in this course, students must submit a written proposal to the chair for approval. This course is not intended for students concentrating in communication design. Prerequisites: Five studio art courses and departmental approval. *Staff.*

390 Independent Study in Studio Art (3). * F and S, tutorial. An advanced course providing opportunities for investigating the use of new techniques or new materials, including mixed-media. To enroll in this course, students must submit a written proposal to the chair for approval. Prerequisites: Five studio art courses and departmental approval. *Staff.*

395 Senior Seminar in Studio Art (3). * S. A capstone seminar course for all seniors majoring in studio art, which re-examines the integral relationship between the production of visual images and faith commitments. Students will examine contemporary theories and practices in art criticism, while refining their own religious convictions. In addition, students will address ethical issues related to art-making as they prepare for professional careers in art-related fields. Slide lectures, selected readings, and class discussions; completion of an art portfolio and an artist statement is required. Prerequisite: Senior standing with a major in studio art. *C. Young.*

The following art courses may be part of supplementary concentrations in journalism: Art Studio 255, 256, 305, 306, 316, 355, and 356.

Art History

101 Introduction to the History of Art I (4). F This course surveys the history of the visual arts from the Paleolithic era to the Renaissance. Although this course concentrates primarily on the development of the historical and religious traditions of Europe, the artistic traditions of non-Western cultures are also addressed. The course is intended for first- and second-year students. *H. Luttikhuisen, L. Vas.*

102 Introduction to the History of Art II (4). S. This course is a historical survey of the visual arts in Western civilization from the Renaissance to the present. It is intended for first- and second-year students. *H. Luttikhuisen, L. Vas.*

232 Early Christian and Byzantine Arts (3). * S, odd years. A historical study of the form and function of visual images in the Early Christian and the Byzantine traditions. Special attention will be given to the rise of the cult of saints, to the veneration and destruc-

tion of religious icons, and to the relationship between sacred images and the imperial court. Slide lectures and class discussions; a research paper is required. Prerequisite: Sophomore standing or above. *H. Luttikhuisen.*

233 Medieval Art (3). * S, even years. A historical study of the form and function of visual images in Western Europe from 400 to 1400. Special attention will be given to the relationship between art and the crusades, to tensions between monastic orders, and to the role of visual images in various kinds of mysticism. Slide lectures and class discussions; a research paper is required. Prerequisite: Sophomore standing or above. Not offered 2002-03. *H. Luttikhuisen.*

234 Northern Renaissance Art (3). * F, odd years. A historical study of the form and function of visual images in Netherlandish and German cultures from 1400 to 1550. Special attention will be given to the rise of naturalism, to the relationship between art and religious devotion, and to the emergence of an art market. Jan van Eyck, Hieronymus Bosch, Pieter Bruegel, and Albrecht Durer are some of the major artists studied. Slide lectures and class discussions; a research paper is required. Prerequisite: Sophomore standing or above. Not offered 2002-03. *H. Luttikhuisen.*

235 Italian Renaissance Art (3). * F, even years. A historical study of the form and function of visual images in Italy from 1300 to 1550. Special attention will be given to the emergence of linear perspective, to the relationship between art and humanism, and to the invention of artistic genius. Giotto, Piero della Francesca, Leonardo da Vinci, and Michelangelo are some of the major artists studied. Slide lectures and class discussions; a research paper is required. Prerequisite: Sophomore standing or above. *H. Luttikhuisen.*

237 Baroque and Rococo Art (3). * S, odd years. A historical study of the form and function of visual images in Western Europe and the American colonies during the seventeenth and eighteenth centuries. Special attention will be given to relationship between art and the Catholic Reformation, to the rise of nationalism and modern science, and to the emergence of philosophical aes-

thetics. Caravaggio, Bernini, Rubens, Rembrandt, Vermeer, and Watteau are some of the major artists studied. Slide lectures and class discussions; a research paper is required. Prerequisite: Sophomore standing or above. *C. Young.*

238 **Nineteenth-Century Art** (3). * S, even years. A historical study of the form and function of nineteenth-century art in Western Europe and the United States, from neo-classicism to impressionism. Special attention will be given to the relationship between art and the politics of revolution, to the cultural implications of industrialization, and to the search for scientific objectivity. David, Delacroix, Goya, Courbet, Manet, and Monet are some of the major artists studied. Slide lectures and class discussions; a research paper is required. Prerequisite: Sophomore standing or above. Not offered 2002-03. *E. Van Arragon.*

239 **Modernism and the Arts** (3). * F, odd years. A historical study of the form and function of visual images in Western Europe and the United States from 1880 to 1960. Special attention will be given to the rejection of optical naturalism, to the emergence of psychoanalysis, to the World Wars, and to the development of modernism in various intellectual circles. Van Gogh, Cezanne, Matisse, Picasso, and Pollock are some of the major artists studied. Slide lectures and class discussions; a research paper is required. Prerequisite: Sophomore standing or above. Not offered 2002-03. *E. Van Arragon.*

240 **Contemporary Art** (3). * F, even years. A historical study of the form and function of visual images in Western Europe and North America since 1960. Special attention will be given to the collapse of modernism, to the revolution in digital technologies, and to contemporary issues concerning race, cultural identity, and gender. Slide lectures and class discussions; a research paper is required. Prerequisite: Sophomore standing or above. *E. Van Arragon.*

241 **Asian Art** (3). * S, odd years. A historical study of the form and function of visual images in Asian Cultures. Special attention will be given to India, China, and Japan. Stu-

dents will address the relationship between visual images and political, religious, and social developments in Asia, including the spread of Hinduism, Buddhism, and Islam. Slide lectures and class discussions; a research paper is required. Prerequisite: Sophomore standing or above. *E. Van Arragon.*

243 **Art of the Americas** (3). * F, even years. A historical study of the form and function of visual images in pre-Columbian and Native American cultures. This course will concentrate on cultural developments before contact with Western civilization, but issues of cultural interaction between Native American and immigrant European cultures will be addressed. Slide lectures and class discussions; a research paper is required. Prerequisite: Sophomore standing or above. *C. Young.*

245 **African and Oceanic Art** (3). * F, odd years. A historical study of the form and function of visual images in the African and Oceanic (Polynesian, Melanesian, and Australian Aboriginal) cultures. Special attention will be given to the relationship between religious commitments and artistic practices within these cultures. Slide lectures and class discussions; a research paper is required. Prerequisite: Sophomore standing or above. Not offered 2002-03. *C. Young.*

393 **Museum Studies** (3). * F and S, tutorial. An advanced course providing opportunities for studying the theory and practice of museum education and/or exhibition curatorial development and installation. Prerequisites: Five courses in art history and permission of the instructor. *H. Luttikhuisen.*

397 **Methods in Art Historiography** (3). * S, even years. A capstone seminar course for all juniors and seniors majoring in art history, which re-examines the integral relationship between art historiography and faith commitments. Students will address ethical and religious issues as they address various methods of art historiography, in preparation for careers in art history. Slide lectures and class discussions; a course paper is required. Prerequisite: Junior or senior standing. Not offered 2002-03. *C. Young.*

CLAS221 **Graeco-Roman Art and Architecture**. *K. Bratt.*

Architectural History and Criticism

201 **Architectural History I** (4). F. A survey of the history of architecture from the Paleolithic era to the Renaissance. Although this course will concentrate primarily on the development of the historical and religious traditions of Europe, the development of non-Western traditions prior to 1500 will also be addressed. Slide lectures and class discussions. Intended for first- and second-year students. *C. Young.*

202 **Architectural History II** (4). S. A survey of the history of architecture from the Renaissance to the present. Although this course will concentrate primarily on the development of the historical and religious traditions of Europe, the development of non-Western traditions after 1500 will also be addressed. Slide lectures and class discussions. Intended for first- and second-year students. *C. Young.*

397 **Architectural Theory and Criticism.** * S, odd years. A capstone seminar course for

all juniors and seniors enrolled in the pre-architecture program, which re-examines the integral relationship between architectural theories and faith commitments. Special attention will be given to contemporary criticism. Students will address ethical and religious issues as they address various methods of architectural design and practice, in preparation for careers in architecture. Slide lectures and class discussions; a course paper is required. Prerequisites: Junior or senior standing. *C. Young.*

Graduate Courses

580 **Workshop in Methods, Materials, and Research in the Fine Arts** (3). This 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.** F, I, and S. *Staff.*

Asian Studies

The Minor in Asian Studies consists of six courses, three required and three electives. The Semester in China (Semester in China 203 and 204) may substitute for History 245 or 246 and Philosophy 225. Courses taken at the Japan Center for Michigan Universities may substitute for required and/or elective requirements. No more than one interim course is allowed in the minor. D. Bays, of the History Department, serves as Chair of the Ad Hoc Committee for the Asian Studies Minor; K. Clark, of the Philosophy Department, and L. Herzberg, of the Foreign Languages Department, serve on the Ad Hoc Committee for the Asian Studies Minor, as well.

ASIAN STUDIES MINOR

Three required courses:
History 245 or 246
Philosophy 225
Religion 351

Three elective courses:

Political Science 277
Art History 241
Chinese 101-218
Japanese 101-218
History 235, 236, 245, 246, 272, 346, 371,
or Semester in China 210

Astronomy

Professors S. Haan (chair), L. Molnar, **S. Steenwyk
Assistant Professor D. Haarsma

Students interested in a career in astronomy or astrophysics should major in physics, minor in astronomy, and plan their program with D. Haarsma or L. Molnar. The sixteen-inch telescope in the observatory and portable telescopes are available for student use through the director of the observatory, L. Molnar.

The Physical World core requirement may be met by Astronomy 110, 111, 112, 211, or 212.

ASTRONOMY MINOR

At least 21 hours, including:

Physics 133 or approved Astronomy interim
Physics 134
Physics 246
Astronomy 211
Astronomy 212
Astronomy 384 or 395

Students pursuing a Physics Major and Astronomy Minor must follow college guidelines for overlap between a major and a minor; this is facilitated by the option in the Physics Major of substituting upper-level courses for introductory ones.

COURSES

110 Planets, Stars, and Galaxies (4). F and S. A survey of the major astronomical objects, including 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; a presentation of the history and development of the universe. The course examines scientific perspectives on the natural world, various relationships between science and culture, the role of Christianity in the development of science, and relationships between Christianity and current scientific findings. Not open to students who have taken, or wish to take, Astronomy 111 or 112. Students who meet the prerequisites of Astronomy 211 or 212 are encouraged to take one of these courses instead. Laboratory. Prerequisites: Interdisciplinary W50/150 or sophomore standing.

111 The Solar System (4). F. This course is similar to Astronomy 110 in providing an introduction to astronomy from a Christian

perspective, but emphasizes the contents of our solar system (ranging from planets and satellites down to meteorites and dust), their interrelatedness, and their development over time. Not open to students who have taken Astronomy 110, but open to students who have taken or plan to take Astronomy 112. Students who meet the prerequisites of Astronomy 211 or 212 are encouraged to take one of these courses instead. Laboratory.

112 Stars, Galaxies, and the Universe (4). S. This course is similar to Astronomy 110 in providing an introduction to astronomy from a Christian perspective, but emphasizes objects beyond our solar system (including stars, black holes, and galaxies), their function and development, and how they fit into the structure and development of the universe as a whole. Not open to students who have taken Astronomy 110, but open to students who have taken or plan to take Astronomy 111. Students who meet the prerequisites of Astronomy 211 or 212 are encouraged to take one of these courses instead. Laboratory. Prerequisites: Interdisciplinary W50/150 or sophomore standing.

211 Planetary and Stellar Astronomy (4). F, alternate years. This course is an introduction to modern astronomy and astrophysics for students with some science and mathematics preparation. The first portion of the course includes a study of the planets and other objects in the solar system, including their physical processes and development and the formation of the solar system as a whole. The second portion of the course emphasizes the physical structure of stars, their origin and development, and their end results (white dwarfs, neutron stars, black holes). Students may take both Astronomy 211 and 212, but one is not a prerequisite for the other. Labo-

ratory. Prerequisites: One course in college calculus (such as Mathematics 132 or 161) and one course in high school or college physics, or permission of the instructor. Not offered 2002-03.

212 Galactic Astronomy and Cosmology (4). F, alternate years. This course is an introduction to modern astronomy and astrophysics for students with some science and mathematics preparation. The first portion of the course includes a study of our own Galaxy, its structure, its contents (including the interstellar medium and dark matter), and its formation and development. The second portion of the course covers other galaxies, including their classification, clustering, and development, as well as active galaxies and quasars. The final portion of the course covers physical cosmology, including expansion of the universe, its age and ultimate fate, and the formation of elements. Students may take both Astronomy 211 and 212, but one is not a prerequisite for the other. Laboratory. Prerequisites: One course in college calculus (such as Mathematics 132 or 161) and one course in high school or college physics, or permission of the instructor.

384 Modern Observational Astronomy (2). S, alternate years. Students will learn tech-

niques of modern observational astronomy by doing observing projects in each of three wavelength regimes: optical, radio, and one other (e.g., X-ray). Optical observations will use CCD detectors to do multi-color photography, photometry, astrometry, and spectroscopy. Radio observations made with the Very Large Array will be used for interferometric imaging. NASA archival data will be used for other wavelengths. Prerequisite: Concurrent registration in or completion of Astronomy 211 or 212. Not offered 2002-03.

390 Independent Study. F, I, and S. Independent readings and research in astronomy. Prerequisite: Permission of the chair.

395 Astronomy Research, Writing, and Presentation (0-3). * F, I, and S. Completion of an approved experimental or theoretical research with presentation of results. The research may be done entirely as part of this course or through another avenue (e.g., summer research with a faculty member). Normally, each student is required to submit a formal, written report and to present results in a department seminar and/or poster presentation. This course may be taken up to three times. Prerequisites: A faculty sponsor and approval of the department.

Biochemistry

See the Department of Chemistry and Biochemistry, page 70, for a description of the biochemistry major and specific biochemistry courses.

Biology

Professors J. Beebe, H. Bouma, D. DeHeer, R. Nyhof, P. Tigchelaar, J. Ubels, R. Van Dragt (chair), U. Zylstra

Associate Professors C. Blankespoor, J. Bonnema, A. Hoogewerf, E. Howell, D. Koetje, D. Warners

Assistant Professor S. Matheson

The department serves a variety of students for several different purposes: It provides several courses which meet the college core requirement in natural science, it provides courses in several pre-professional programs, and it provides programs of concentration in areas of cell and molecular biology, biotechnology, organism biology, ecology, and environmental biology. A seminar program acquaints students with professionals working in a variety of areas in biology.

Students interested in a biology program of concentration with a particular emphasis should consult with the appropriate advisor. A partial listing of staff interest areas includes:

- J. Beebe — plant molecular biology, plant development, and plant physiology
- C. Blankespoor — invertebrate zoology, animal behavior, and parasitology
- J. Bonnema — immunology, cell biology, and cell signal transduction
- H. Bouma — animal cell and molecular biology, human genetics, and medical ethics
- D. De Heer — animal cell and molecular biology, and immunology
- A. Hoogewerf — microbiology, cell and molecular biology, and nutrition
- E. Howell — eukaryotic genetics, cell and molecular biology of budding yeast, and the cell cycle
- D. Koetje — plant physiology, molecular genetics, and biotechnology
- R. Nyhof — animal physiology and pharmacology
- S. Matheson — neurobiology, developmental biology, and signal transduction
- P. Tigchelaar — animal anatomy and neuro-anatomy and physiology
- J. Ubels — animal physiology, cell and molecular biology
- R. Van Dragt — ecosystem and restoration ecology, vertebrate natural history, and evolutionary biology
- D. Warners — plant ecology, plant taxonomy, wetlands ecology, and environmental biology
- U. Zylstra — cell biology and electron microscopy, environmental ethics, and philosophy of biology

BIOLOGY MAJOR

Biology 141, 242 (or 205 and 206), and 243
Four from Biology 3XX (may include one approved interim)
One from Biology 35X, 385, or 399
Biology 395 or 396
Biology 295 (taken twice)

Cognates

Chemistry 103-104, 253 or 261, and one course from Chemistry 201, 262, 271/281, 323/383, or Geology 151
Mathematics 143-132 or Mathematics 161-162 or Physics 221-222

BIOLOGY MINOR

Biology 141
Biology 242
Biology 243
Three from Biology 3XX (may include an approved interim)

BIOTECHNOLOGY MAJOR

Biology 141, 242, 243, and 256
Biology 324, 334, 383, and one additional 300-level Biology course
Biology 356
Biology 394
Biology 295 (taken twice)

Cognates

Chemistry 103-104, 253 or 261-2, 323

Mathematics 132 (or 161) and 143

Two courses from Computer Science 105-140 (130 and 135 are recommended)

BIOTECHNOLOGY MINOR

Biology 256

Biology 334

One from Biology 354, 356, 385, or 399, as approved by the biotechnology advisor (D. Koetje)

At least one from Biology 141, 242, 243, 321, 324, 331, 332, 333, 335, or 336

Chemistry 253 or 261

One additional 200- or 300-level Chemistry course

The biotechnology minor is designed to complement a major concentration in Chemical Engineering, Chemistry, Biochemistry, or Biology. To satisfy overlap rules, Biochemistry majors and Chemistry majors should take two courses from Biology 141, 242, 243, 321, 324, 331, 332, 333, 335, or 336. Biology majors must take one course from Biology 321, 324, 331, 332, 333, 335, or 336 in addition to the four 300-level Biology courses required in their major. Engineering majors, and other majors not requiring Biology cognate courses, can satisfy this requirement by taking Biology 141.

SECONDARY EDUCATION

BIOLOGY MAJOR

Biology 141 and 242 or 205 and 206, and 243

Four courses from the following two groups with at least one course from each group:

Group I: Biology 311, 313, 323, 331, 332, 338, 341, 344, 345, 346 and approved ASI courses. Group II: Biology 321, 324, 333, 334, 335, 346

Biology 357

Biology 395

Biology 295 (taken twice)

Cognates

Chemistry 103-104, 253 or 261, and one course from Chemistry 201, 262, 271/281, 323/383, or Geology 151

Mathematics 143-132 or Mathematics 261-262 or Physics 221-222

SECONDARY EDUCATION

BIOLOGY MINOR

Biology 141, 242, and 243

Biology 357

Two advisor-approved electives, at least one of which must be a 300-level course

Prospective secondary teachers should complete Biology 357 (Investigations in Biology for Teachers) as part of the normal program of concentration. Programs of concentration should be prepared on the basis of current guidelines established by the National Science Teachers Association. The NSTA guidelines recommend study in zoology, botany, physiology, genetics, ecology, microbiology, cell biology/biochemistry, and evolution. A minor in physical science is recommended, and this minor may be constituted of the cognates plus Geology 313. Directed teaching in biology is available only during the spring semester. Prior to the teaching internship, students must have the approval of the department. Criteria for approval are found in the *Teacher Education Program Guidebook*, available in the Education Department. The advisor for biology teaching major and minor programs is U. Zylstra.

ELEMENTARY EDUCATION

BIOLOGY MAJOR

Biology 141, 242 or 205 and 206, and 243

Four from Biology 311S, 321, 323, 324, 331, 333, 335, 336, 341, 345, or 346

Biology 357

Biology 395

Biology 295 (taken twice)

Cognates

One year of physics (either Physics 221-222 or 126 and 225) or one year of mathematics (Mathematics 143, 132, or 161-162)

Two years of chemistry (Chemistry 103, 104, 261, 262; or 105, 261, 262, 323/383)

or one year of chemistry and one year of geology (Chemistry 113, 114, Geology 151, 152, or 313)

ELEMENTARY EDUCATION

BIOLOGY MINOR

Biology 141, 242, 243

Three advisor-approved electives, at least one of which must be a 300-level course

Cognates

Physics 111 or 212

Elective from Geology, Chemistry (typically Chemistry 104 or 113), or Physics

ELEMENTARY AND SECONDARY GENERAL SCIENCE STUDIES MAJOR

The elementary and secondary group science majors require at least 36 hours of natural science courses, which are selected in consultation with a science education advisor. The major includes at least four semester hours in each of biology, chemistry, physics and earth science; a pre-approved course that discusses the relationships among science, technology, and society; and course sequence(s) in particular science areas, which are chosen in consultation with the science education advisor. Cognate courses may also be required (e.g. Mathematics 110, 143, or 161). A more detailed description of this program can be found in the *Teacher Education Program Guidebook*. Science Education Advisors: Secondary: U. Zylstra, Biology Department; Elementary: S. Haan and J. Jadrich, Physics Department.

ELEMENTARY AND SECONDARY GENERAL SCIENCE STUDIES MINOR

The elementary and secondary group science majors require at least 24 hours of natural science courses, which are selected in consultation with a science education advisor. Both elementary and secondary minors require at least four semester hours in each of biology, chemistry, physics, and earth science. The secondary minor requires a sequence of approved courses in one particular science area and a pre-approved course that discusses the relationships among science, technology, and society. Cognate courses may also be required (e.g., Mathematics 110, 143, or 161). A more detailed description of this program can be found in the *Teacher Education Program Guidebook*. Science Education Advisors: Secondary: U. Zylstra, Biology Department; Elementary: S. Haan and J. Jadrich, Physics Department.

RECOMMENDED COGNATES

Chemistry courses should be completed by the end of the second year of the program.

Computer science is also recommended. These cognates are minimum requirements. Students planning to do graduate work in cell and molecular biology are advised to complete both the physics and mathematics cognates and organic chemistry. Those planning careers in environmental biology should consider the Environmental Science major, pages 137-139. Other environmental courses in biology, geology, and natural resources are offered at the AuSable Institute of Environmental Studies in Mancelona, Michigan. Information on AuSable courses is available from the AuSable advisor, D. Warners.

HONORS

To graduate with honors in the Biology Department, the student in satisfying the college honors program must complete three biology courses with honors, submit an honors thesis, and earn a minimum 3.3 GPA in the major. Of the required biology courses, one will normally be the honors section of Biology 141 or 242. The second honors course will be taken from those courses numbered Biology 300-349, the details of which will be worked out by the student and instructor at the time that the student registers for the course. The third course requirement is the completion with honors of an independent research project (Biology 399) or investigations course (Biology 352-357). Normally the investigative research conducted in one of these courses will be reported in the form of a scientific research paper, which will constitute the honors thesis.

GROUP MAJORS

A group major in science and mathematics meets the needs of some students, particularly those in professional programs, such as physical therapy and physician assistant. These majors, however, are not appropriate for students planning to attend medical school or graduate school in biology. Group majors require a minimum of twelve courses in natural science and mathematics, ten of which must be from two disciplines with a minimum of four courses from each. The remaining two cognates must be chosen from a third discipline. At least two 300-level courses in one discipline must be included in the ten-course component of this group. Biology 395/396 or equivalent is required.

The chairs of the departments involved must approve each program.

Prerequisite to a program of concentration in biology is a minimum average of “C” (2.0) in Biology 141, 242, and 243 or approved equivalent courses. The core requirement in biology is met normally by Biology 111, 112, or 115. In some cases Biology 141 may be appropriate.

COURSES

General College Courses

111 Biological Science (4). F and S. This course is a study of the biological concepts of ecology, genetics, and evolution and their contribution to an understanding of the nature of living systems within the framework of a biblical worldview. An emphasis is placed on the application of these concepts to some important contemporary issues, such as environmental stewardship and genetic engineering. Laboratory. *Staff.*

112 Life Science for Elementary School Teachers (4). F and S. This course is designed for students in the elementary education program. In this course students use life science concepts in an inquiry-based approach to build a biological knowledge base that is appropriate to the elementary school classroom. The course covers topics in life sciences that are recommended as teaching objectives in elementary education. These include activities studying cells, classification of living organisms, reproduction and heredity, evolution, and how life forms coexist interdependently within ecosystems. Throughout the course a perspective of respect for God's creation and Christian stewardship of the creation is presented as the purpose for investigating and learning to understand life on earth. Laboratory. *Staff.*

115 Human Biology (4). F and S. This is a study of the major theories of biology as applied to humans. The student is introduced to the concepts of cell, genetics, ecology, and evolution through the study of the anatomy, physiology, and development of the human body and health. Students apply these concepts to contemporary issues in human biology, society, and the environment. The laboratory utilizes methods of biological investigation, with an emphasis on human anatomy and physiology. Laboratory. *Staff.*

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

IDIS 210 History of Science (3). *A. Leegwater.*

Pre-Professional Courses

205 Human Anatomy (4). F. A study of the structure of human organ systems, including some developmental anatomy and histology. The laboratory will emphasize human anatomy and will include dissection of a cat as a representative mammal and some study of histology. Prerequisite: Biology 141 or equivalent. *P. Tigchelaar.*

206 Human Physiology (4). F. An introduction to the physiology of the human being. Function of the major organ systems is studied, including the circulation, respiration, excretion, muscle, nervous and endocrine systems. The laboratory introduces basic physiological techniques in an investigative setting. Prerequisites: Biology 242 or 205, Chemistry 115, 253, or equivalent. *R. Nyhof, S. Mattheson.*

207 Medical Microbiology (4). S. A study of microorganisms and their activities. Topics include microbial cell structure and function, metabolism, microbial genetics, viruses, and the role of microorganisms in disease, immunity, and other applied areas. Three hours of lecture and two laboratory periods per week. Prerequisite: Biology 141 and Chemistry 115, 253, or equivalent. *A. Hoogewerf.*

Program of Concentration Courses

Basic Courses

141 Cell Biology and Genetics (4). F and S. This course studies the structures, functions, and evolution of prokaryotic and eukaryotic cells at the molecular, subcellular, and cellular level. Fundamental concepts of genetics are studied including Mendelian genetics and molecular genetics. The course introduces basic historical, philosophical, and biblical frameworks for the study of biology. Applications of course concepts to contemporary issues in biology are also considered. The laboratory consists of investigations in molecular biology, cell biology, and genetics. *Staff.*

242 Animal Biology (4). S. An introduction to the biology and diversity of select groups

of animals and protists. Topics include taxonomic diversity, structure, and function at the organ and tissue level, and population biology and evolution. Emphasis is placed on considering these topics in an environmental context. Lecture and laboratory. Prerequisite: Biology 141. *C. Blankespoor, J. Ubels.*

243 Plant Biology (4). F An introduction to plant biology that includes a consideration of the structure, function, and development of plants as organisms, a consideration of the relationships of plants to each other and the other organisms in a study of selected communities within biomes, and consideration of basic ecosystem approaches, and topics in the diversity of algae, fungi, and plants. Lecture and laboratory. Prerequisites: Biology 141. *J. Beebe, D. Warners.*

256 Introduction to Biotechnology (4). S An introduction to the basic methodologies and applications of biotechnology: DNA cloning and recombination, transformation, electrophoresis, blotting, and protein analyses. Laboratory exercises also facilitate development of basic lab skills (maintenance of notebooks, routine calculations, preparation of reagents and materials, and safety). Reading assignments and discussions throughout the course facilitate students' integration of Christian perspectives into their learning of biotechnology. Lectures and laboratories. Prerequisites: Biology 141, Chemistry 253 or 261. May be taken for program credit only in the biotechnology major. *D. Koetje.*

Advanced Courses

311S Field Botany (4). SS. 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 AuSable Trails Institute of Environmental Studies located near Mancelona, Michigan. Prerequisite: Biology 243, or an introductory botany course. *Staff.*

313 Paleontology (4). * S. A study of the organisms that once lived on the Earth. Includes an examination of the processes of fossilization and methods of discovering the structure, habitat, and relationship of those organisms, and a review of their distribution and

life history. A broad spectrum of organisms is studied with emphasis on invertebrate animals. Laboratory, field trip. Also listed as Geology 313. Prerequisite: Geology 152 or Biology 242 and 243. Not offered 2002-03. *R. Stearley.*

321 Genetics and Development (4). * F A study of modern concepts of the gene and the analysis of progressive acquisition of specialized structures and functions by organisms and their components. The laboratory includes study of genetic and developmental phenomena of selected organisms. Lectures and laboratory. Prerequisites: Biology 242 and Chemistry 115, 253, or 261. *E. Howell.*

323 Comparative Vertebrate Anatomy (4). * S. A comparative study of vertebrate structure and of the functional significance of these structural variations. Lectures and laboratory. Credit cannot be applied toward a biology major for both Biology 205 and 323. Prerequisite: Biology 242. *P. Tigchelaar.*

324 Molecular Biology (4). * S. A study of photosynthesis, biosynthesis of macromolecular precursors, the chemistry of the storage, transmission, and expression of genetic information, biochemical dimensions of selected physiological processes, and philosophical and ethical issues related to biochemistry and molecular biology. Lectures and laboratory (Biology 383). Also listed as Chemistry 324. Prerequisite: Chemistry 323. *L. Louters.*

331 Comparative Animal Physiology (4). * S. A study of animal physiology using a cellular and comparative approach. Topics include membrane transport, nerve function, sensory mechanisms, muscle contraction, hormone action, ion and osmotic regulation, temperature relations, metabolism and circulation. Lectures and laboratory. Credit cannot be applied toward a biology major for both Biology 206 and 331. Prerequisites: Biology 242 or 205; Chemistry 115, 253, or 261. *R. Nyhof.*

332 Plant Physiology (4). * S, alternate years. A study of form and function in plants as whole organisms. Course topics include photosynthesis and productivity, physiological and developmental responses to environmental cues, mineral nutrition, and water and solute transport. Lectures and laboratory. Prerequisites: Biology 243; Chemistry 115, 253, or 261. *J. Beebe.*

333 Immunology and Hematology (4). * S. A study of immunology and hematology including innate, cellular, and humoral immunity, blood composition, hemostasis, coagulation, complement, immunogenetics, the major histocompatibility complex, immunoregulation, and abnormalities of the immune and hematologic systems. Lectures and laboratory. Prerequisites: Biology 206 or 242, and Chemistry 115, 253, or 261. *J. Bonnema, D. DeHeer.*

334 Cell and Tissue Culture (4). * F A study of the biology, methodology, and applications of in vitro cultures of animal and plant cells. Lectures and labs. Prerequisites: Biology 141, Chemistry 253 or 261. *D. Koetje, D. DeHeer.*

335 Cell Biology (4). * F A study of the structure, function, and development of eukaryotic cells from the molecular to the tissue level with emphasis on the cellular and organelle levels of organization. The laboratory will engage students in investigations of cells and tissues including microscopy, tissue culture, histology, and image analysis. Lectures and laboratory. Prerequisites: Biology 242 and 243 and Chemistry 115, 253, or 261. *J. Ubels.*

336 General Microbiology (4). * F alternate years. A study of the structure and function of microorganisms, including a consideration of their role in food production and spoilage, biogeochemical cycles and environmental quality, and as tools in genetic engineering. Lectures and laboratory. Prerequisites: Biology 242, 243, or 206; Chemistry 115, 253, or 261. Not offered 2002-03. *A. Hoogewerf.*

338 Animal Behavior (4). * S, alternate years. A study of the mechanisms and adaptive significance underlying the behavior of animals. Topics include natural and sexual selection, behavioral ecology, social behavior, orientation and navigation, animal communication, and chemical ecology. Lectures and laboratory. Prerequisites: Biology 242 and 243. *C. Blankespoor.*

341 Entomology (4). * F, alternate years. Study of the biology of insects with emphasis on systematics. Lectures, laboratory, and field trips. Prerequisites: Biology 242 and 243. Not offered 2002-03. *C. Blankespoor.*

344 Vertebrate Biology (4). * S, alternate years. Study of the ecology and evolution of fish, amphibians, reptiles, birds, and mammals. Lec-

tures and laboratory. Prerequisite: Biology 242. Not offered 2002-03. *R. Van Dragt.*

345 Ecosystem Ecology and Management (4). * F Detailed study of ecosystem structure and function, with special emphasis on local ecosystems, and the scientific basis for managing and restoring ecosystems. Lectures and laboratory. Prerequisites: Biology 242 and 243. *R. Van Dragt.*

346 Plant Taxonomy (4). * F, alternate years. Identification, nomenclature, and classification of vascular plants. Lectures, laboratories, and field trips. Prerequisite: Biology 243. *D. Warners.*

383 Laboratory in Biochemistry (1). * F and S. A laboratory course designed to teach students modern biochemical separation and analytical techniques. Included in this course are the following topics: Exclusion, ion-exchange, affinity, and high performance liquid chromatography, agarose gel and polyacrylamide gel electrophoresis, ultracentrifugation, ultraviolet/visible spectroscopy, enzyme kinetics, and recombinant DNA techniques. Students will be required to carry out individual projects involving the purification and analysis of a biological macromolecule from cells or tissue. Also listed as Chemistry 383. Pre or co-requisite: Chemistry 323. *L. Louters.*

Research and Practicum Courses

Prerequisites for all investigative courses include the three basic courses in the program of concentration. Because of enrollment limits, instructor permission must be received before registration.

290 Directed Research (2). F, I, and S. The student enrolling in this course will be involved in laboratory or library research on a project currently being studied by one or more staff members. Application forms are available from the department chair and admission will be determined by the chair and the staff member directing the project. *Staff.*

354 Investigations in Physiological Ecology. Not offered 2002-03. *J. Beebe, R. Van Dragt.*

354 Investigations in Plant Ecology (4). * F. Not offered 2002-03. *D. Warners.*

354 Investigations in Genetics. Not offered 2002-03. *E. Howell.*

354 Investigations in Restoration Ecology (4).

* S. Directed investigation of strategies and techniques used to rehabilitate damaged ecosystems. Standard field and laboratory procedures will be used to assess the structure, function, and composition of both damaged and restored ecosystems. Greenhouse studies will explore techniques for propagating plants for restoration work. Class work will focus on one or two restoration projects in the area of the college. Individual student projects will address questions raised in connection with class studies and will emphasize experimental design, data analysis, and the presentation and application of research findings. Student work will be reported in written, poster and oral presentations. Prerequisites: Biology 242 and 243, Chemistry 104, and permission of the instructor. *R. Van Dragt.*

354 Investigations in Microbiology (4).

* F. Laboratory studies in the biology of microorganisms. Emphasis will be given to experimental design and the collection, analysis, and presentation of data. Topics will include studies of microbial metabolism and diversity, and the interaction of microbial cells with other cells and their environment. Through laboratory exercises and discussion, students will initially learn the techniques for studying microorganisms. Students will then read relevant scientific literature, develop their own research projects, and present the results of their work. Prerequisites: Biology 242 and 243, Chemistry 104, and permission of the instructor. *A. Hoogewerf.*

354 Investigations in Inflammation (4).

* S. This course will investigate the biology of inflammation, an organism's protective response to cellular injury mediated in mammals by neutrophils and macrophages. Students will explore the inflammatory behaviors of macrophages, e.g., phagocytosis, proliferation, mediator release, and propagation, spectrophotometric and fluorometric assays for cellular products, microscopy, image analysis, and time-lapse photography for morphological assessments, and staining procedures for cellular identification. Students will study experimental design and assessment, conduct individual research projects, write a report, and make oral and poster presentations. Prerequisites: Biology 242 and 243, Chemistry 253 or 261, and permission of the instructor. *D. DeHeer.*

354 Investigations in Signal Transduction (4).

* F. This course is designed to investigate the intracellular signaling pathways that are triggered in specific cells of the immune system. Students will use primary literature, class discussion, and laboratory experiments to begin to understand some basic principles of signal transduction and the techniques that are used to study such signaling events. This background will then enable students to develop individual research projects in which they will design experiments, collect and analyze data, and present their results to their classmates. Prerequisites: Biology 242, Chemistry 253 or 261, and permission of the instructor. *J. Bonnema.*

356 Investigations in DNA Technology (4).

S. A directed investigations course in which students employ molecular biology methods to characterize DNA clones from gene libraries, analyze the expression patterns of these clones, sequence them, and subject them to computer-based sequence analyses. Course projects culminate in multimedia or poster presentations of results. Two labs per week. Prerequisites: Biology 141, Chemistry 253, or 261. Recommended: Biology 256. *D. Koetje.*

357 Investigations in Biology for Teachers (4).

* F. This course, intended for biology majors and minors in the education program, is designed to train students in the use of laboratory for investigating and understanding the content of biology. Typically, all students study topics in plant and animal genetics, physiology, behavior, anatomy, and ecology. Individually, students select a content area for further exploration. Students instruct each other through investigations designed to guide their discovery and understanding of biological concepts. In doing so, students model the investigative process that builds and critiques the content base of biology. Students use computers for data collection, analysis, and presentation. A final presentation of independent research in a selected content area is required. Prerequisites: Biology 242, 243, and permission of the instructor. *C. Blanhespoor.*

359 Seminar in Secondary Teaching of Biology (3).

S. A course in perspectives on, principles of, and practices in the teaching of biology on the secondary level. This course should

be taken concurrently with Education 346. The seminar provides a forum for the discussion of concerns that develop during directed teaching. This course is part of the professional education program and may not be included in the major or minor in biology. *Staff*.

385 Internship in Biology (0-4). F, I, S, and SS. This course is an off-campus internship that emphasizes professional application of the concepts and principles learned as part of a Biology program. A student has responsibilities in a private firm, office, laboratory, a not-for-profit organization, or a government agency. The intern works on a specific project under the direct supervision of an employer-supervisor and a faculty internship coordinator. The intern will meet with the faculty coordinator, will maintain a journal, and must present an oral or written report summarizing the internship experience. The off-campus employer-supervisor will complete an evaluation report on the work of the intern. With faculty approval, this course may satisfy the investigations requirement in the biology major or biotechnology minor. Only one Biology 385, 390, or 399 course may be used to satisfy the requirements for the biology major or biotechnology minor. Prerequisites: At least sophomore standing in Biology, a cumulative GPA of 2.0 or better, an average GPA of 2.0 or better in all credited science and mathematics courses, and approval by both the department and the off-campus employer.

390 Independent Study (1-4). F, I, S, and SS. This course provides the opportunity for a student to conduct library research, or under the direction of a faculty member, to study a subject not currently offered in the biology curriculum. Permission to enroll must be obtained from the department chair and the faculty member directing the project. Requirements will be determined by the supervising faculty member. Only one Biology 390 or 399 course may be used to satisfy the requirements of the biology major.

399 Undergraduate Research (3-4). F, I, S, and SS. Students enrolling in this course will conduct laboratory or field research under the supervision of a faculty member. The project may be part of an ongoing research program of the supervising faculty member or may be of the student's own design. A written thesis on the project will be required, as well as pre-

sentation of a poster or seminar to the department. Permission to enroll must be obtained from the department chair and the faculty member directing the project, and with their permission, this course may fulfill the requirement for an Investigations course in the biology major. Only one Biology 390 or 399 course may be used to satisfy the requirements of the biology major. Prerequisites: Biology 242 and 243.

Seminar Courses

295 Biology Seminar. F and S. No credit. Various topics in biology and related disciplines are presented by visiting speakers, faculty, and students. During the junior and senior year, majors must attend two of the four semesters; freshman and sophomore students are encouraged to attend. *C. Blankespoor*.

394 Perspectives in Biotechnology (3). I. This course explores, within a reformed Christian framework, the historical and philosophical perspectives pertaining to the science and practice of biotechnology. Students explore the underlying assumptions of current biotechnology research as well as its social, ethical, and legal implications. They address governmental regulations affecting laboratory safety, biohazards, and containment of genetically modified organisms and patenting. Prerequisites: Senior status in the biotechnology program of concentration, Biblical Foundations I or Theological Foundations I, Developing a Christian Mind, and Philosophical Foundations. *Staff*.

395 Perspectives in Biology (3). F. This course examines ways in which biology has developed through conceptual and technological innovations, ways in which worldviews have informed biological concepts, the inherent limitations of the scientific enterprise, and philosophic viewpoints held by contemporary biologists. The course will also examine how a biblically informed worldview contributes to an understanding of living systems and to the application of such understanding to societal issues, such as environmental sustainability and appropriate uses of biotechnology. Prerequisites: Senior status in the biology major program, Biblical Foundations I or Theological Foundations I, Developing a Christian Mind, and Philosophical Foundations. *Staff*.

396 **Perspectives in Medicine** (3). * S. This course is a critical study of the historical and philosophical perspectives pertaining to the science and practice of medicine with particular emphasis on the methodology, results, and implications of current medical research. Students study the medical literature towards a critical analysis of selected representative societal and ethical issues in medicine. Prereq-

uisites: Senior status in biology or biochemistry program or permission of the instructor, Biblical Foundations I or Theological Foundations I, Developing a Christian Mind, and Philosophical Foundations. *Staff*.

Graduate Courses

590 **Independent Study**. * F, I, and S. *Staff*.

Business

The business administration program at Calvin College is intended to prepare students for careers in business by balancing its business courses with the college's strong liberal arts core curriculum. Preparation for a business career is provided by meeting the general degree requirements and the business concentration in the Department of Economics and Business. This program requires a minimum of fourteen courses - the equivalent of forty-nine semester hours in business, economics, and related mathematics and computer science courses. Students may choose the general business program or may select an emphasis area from among several business functions such as marketing, management, or finance. A full description of business major and cognate requirements is found on pages 97-98. Any of these concentrations, along with the general graduation requirements, acquaints students with the functions of the business firm and provides an understanding of the environment of business and human behavior, as well as an opportunity to develop one's personal, Christian commitment and ethical sensitivity. After completion of the program, students are prepared for entry-level positions in a variety of business occupations, as well as for graduate study in business.

See the Department of Economics and Business for descriptions of course offerings.

Chemistry and Biochemistry

Professors R. Blankespoor, R. Brummel, R. DeKock (chair), A. Leegwater; L. Louters,
†K. Carlson Muyskens, †M. Muyskens, K. Piers

Associate Professor K. Sinniah

Assistant Professors E. Arnoys, D. McCarthy, D. Vander Griend

The department offers programs of concentration for students interested in continuing their studies in graduate school, for those interested in a career as a chemist or biochemist in government or private industry, and for those interested in teaching chemistry at the secondary school level. A concentration in chemical engineering is offered with the Engineering Department, see page 117. Students who are majoring in Environ-

mental Science with a Chemistry focus should consult the entry under Environmental Science, page 134, for a description of this program.

Prerequisite to a concentration in chemistry is a minimum average of “C” (2.0) in Chemistry 104 and in one course from Chemistry 201, 253, or 261. The physical science core requirement may be met by Chemistry 101, 103, 104, or 115. For general college students the preferred core course is Chemistry 101.

CHEMISTRY MAJOR

Chemistry 103 and 104
Chemistry 201
Chemistry 261 and 262
Chemistry 304 or 317
Two from Chemistry 318, 323/383, 329, and 330
Chemistry 396
Chemistry 295 (four times)

Cognates

Mathematics 161 and 162
Physics 221 and 222 or 133 and 235

CHEMISTRY MINOR

Chemistry 103 and 104
Chemistry 201
Chemistry 253 or 261
Chemistry 304 or 317
Chemistry 396
One from Chemistry 262, 318, 323/383, 329, or an approved interim

CHEMISTRY MAJOR (ACS Certified)

For students preparing for graduate study in chemistry, the certification requirements of the American Chemical Society for professional training in chemistry may be met by completing the following courses:

Chemistry 103 and 104
Chemistry 201
Chemistry 261 and 262
Chemistry 295 (four times)
Chemistry 317 and 318
Chemistry 323
Chemistry 329
Chemistry 330
Chemistry 395 (3 semester hours)
Chemistry 325
Chemistry 396

Cognates

Mathematics 161 and 162
Mathematics 261
Mathematics 231 or 255
Physics 133 and 235
Computer Science 145 (recommended)

SECONDARY EDUCATION

CHEMISTRY MAJOR

Chemistry 103 and 104
Chemistry 201
Chemistry 253 and a four semester-hour, approved elective or Chemistry 261 and 262
Chemistry 323 and 383L
Chemistry 304 or 317
Chemistry 396
Chemistry 295 (four times)

Cognates

Biology 115 or 141
Geology 151, Astronomy 201, or Interdisciplinary 250
One sequence in Physics from 133, 235 (recommended), Physics 133, 134, 235, Physics 221, 222
Mathematics 161

SECONDARY EDUCATION

CHEMISTRY MINOR

Chemistry 103 and 104
Chemistry 253 or 261
Chemistry 304 or 317
Chemistry 396
One advisor-approved elective from Chemistry 201, 262, 271/281, or 323/383

Students planning secondary majors or minors in chemistry should consult K. Piers, of the Chemistry Department. Directed teaching in chemistry is available only during the spring semester. Prior to the teaching internship, students must have the approval of the department. Criteria for approval are found in the Teacher Education Program Guidebook, available in the Education Department.

ELEMENTARY AND SECONDARY GENERAL SCIENCE STUDIES MAJOR

The elementary and secondary group science majors require at least 36 hours of natural science courses, which are selected in consultation with a science education advisor. The major includes at least four semester hours in each of biology, chemis-

try, physics and earth science; a pre-approved course that discusses the relationships among science, technology, and society; and course sequence(s) in particular science areas, which are chosen in consultation with the science education advisor. Cognate courses may also be required (e.g., Mathematics 110, 143, or 161). A more detailed description of this program can be found in the *Teacher Education Program Guidebook*. Science Education Advisors: Secondary: U. Zylstra, Biology Department; Elementary: S. Haan and J. Jadrach, Physics Department.

ELEMENTARY AND SECONDARY GENERAL SCIENCE STUDIES MINOR

The elementary and secondary group science majors require at least 24 hours of natural science courses, which are selected in consultation with a science education advisor. Both elementary and secondary minors require at least four semester hours in each of biology, chemistry, physics, and earth science. The secondary minor requires a sequence of approved courses in one particular science area and a pre-approved course that discusses the relationships among science, technology, and society. Cognate courses may also be required (e.g., Mathematics 110, 143, or 161). A more detailed description of this program can be found in the *Teacher Education Program Guidebook*. Science Education Advisors: Secondary: U. Zylstra, Biology Department; Elementary: S. Haan and J. Jadrach, Physics Department.

BIOCHEMISTRY MAJOR

Chemistry 103 and 104
Chemistry 201
Chemistry 261 and 262
Chemistry 304 or 317
Chemistry 323 and 324
Chemistry 383
Chemistry 396
Chemistry 295 (four times)

Cognates

Mathematics 161 and 162
Physics 221 and 222 or 133/235
Biology 141
Two from Biology 242, 243, 321, 333, 335, or 336 (one of which must be a 300-level course)

BIOCHEMISTRY MINOR

Chemistry 103 and 104
Chemistry 253 or 261
Chemistry 323 and 324
Chemistry 383
One course from Chemistry 396, Biology 395, and 396
One course from Chemistry 201, 262, 304, 317, or an approved interim

BIOCHEMISTRY MAJOR (ACS Certified)

For students preparing for graduate study in biochemistry, the certification requirements of the American Chemical Society for professional training in chemistry may be met by completing the following courses:

Chemistry 103 and 104
Chemistry 201
Chemistry 261 and 262
Chemistry 295 (four times)
Chemistry 317 and 318
Chemistry 323 and 324
Chemistry 329
Chemistry 330
Chemistry 383
Chemistry 395 (3 semester hours)
Chemistry 396

Cognates

Mathematics 161 and 162
Physics 133 and 235
Biology 141
Biology 321
One course from Biology 242, 243, 333, 335, and 336
Computer Science 145 (recommended)

GROUP SCIENCE MAJORS

A group major in science and Mathematics meets the needs of some students, particularly those in professional programs. These majors are not normally 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. At least two 300-level courses in one discipline must be included in the ten-course component of this group. The chairs of the three departments involved must approve each program of this type.

HONORS PROGRAM

The Department of Chemistry sponsors an honors program to supplement the formal course offerings in the department's degree programs, increase both the breadth and depth of the student's knowledge of modern chemistry, and lead to an honors degree in chemistry upon graduation. The program offers guided study in chemistry through tutorials, independent research, and seminars.

The requirements for graduation with honors in chemistry or biochemistry are: (1) at least a 3.3 cumulative grade point average; (2) at least a 3.0 cumulative grade point average in courses in the major; (3) a major in chemistry or biochemistry; (4) completion of at least 4 semester hours of 395H (395 taken as an honors course); (5) completion of at least two other required chemistry or biochemistry courses for honors credit, one of which must be at the 200-level or higher; and (6) completion of at least three additional honors courses, two of which must be outside the Department of Chemistry and Biochemistry.

COURSES

101 The Molecular World (4). S. This is a general course designed for the non-science major and the elementary education student. The course explores the role of chemistry and its resulting technologies in the environment and contemporary society. It emphasizes the nature of scientific investigation, some historical developments in chemical theory, chemical periodicity and reactivity, and our daily interaction with synthetic materials and chemicals. The course is taught from a biblical worldview and addresses issues such as the validity and limitations of scientific knowledge, human responsibility in applying such knowledge in society, and the care and stewardship of natural resources. Laboratory. *E. Arnos*.

103 General Chemistry I (4). F. This course is a study of the basic principles of chemistry, with emphasis on the laws of chemical combination, descriptive inorganic chemistry, thermochemistry, the gas, liquid, and solid states of matter, the periodic law, atomic structure and chemical bonding, and the nature of intermolecular forces. The course is taught from a biblical and reformed worldview and

addresses issues such as the validity and limitations of scientific knowledge, the methodology of the physical sciences, human responsibility in applying such knowledge in society, and the care and stewardship of natural resources. Laboratory. Prerequisite: One year of high-school chemistry or permission of the instructor. Note: Successful completion of the Chemistry 103-104 sequence meets the two-course requirement of the Natural World category. *R. DeKock, A. Leegwater, Staff*.

103R General Chemistry Recitation (1). 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 a weak high school background in mathematics and chemistry. The course emphasizes problem solving and the understanding of basic chemistry concepts. Prerequisite: Concurrent registration in Chemistry 103. *L. Louters, Staff*.

104 General Chemistry II (4). S. A continuation of Chemistry 103 with emphasis on kinetics, chemical equilibria involving gases, weak acids and bases, and slightly soluble solids, free energy changes, electrochemistry, transition metal chemistry, descriptive chemistry, and nuclear chemistry. Laboratory. Prerequisite: Chemistry 103 or the equivalent. *R. DeKock, Staff*.

115 Chemistry for the Health Sciences (4). F and S. This course is specifically designed for those planning for a health care career such as Nursing or other allied health careers that require a chemistry course. The fundamental concepts of general chemistry, organic chemistry, and biochemistry are presented with an emphasis on the chemical nature of biological systems. Topics such as molecular bonding and structure, equilibrium chemistry, and chemical reactivity as illustrated by acid/base reactions and redox reactions are presented in a biological context such as membranes, enzymes, buffers, and cellular energy metabolism. Issues regarding the ethics and stewardship of health also will be discussed. Laboratory. Prerequisite: High school chemistry. *L. Louters*.

201 Analytical Chemistry (4). F. A problem-solving approach that incorporates sampling, sample preparation, separation of the analyte from interfering substances, measurement,

data analysis, and interpretation. Quantitative analysis is presented in the context of analytical methods that primarily include separation science (gas, liquid, ion chromatography, and electrophoresis), optical spectroscopy (uv-visible, fluorescence, and atomic absorption spectroscopy), and electrochemistry (electrode potentials, ion-selective electrodes, and sensors). The laboratory includes chemical analysis of water in the athletic field and nature preserve ponds, and the measurement of air quality across Calvin's campus using modern analytical techniques and wet chemical methods. These methods illustrate the principles of complex equilibria, theory of acids and bases, and titrations. Laboratory. Prerequisite: Chemistry 104. Not open to seniors except by permission. *K. Sinniah*.

253 Fundamentals of Organic Chemistry (5). F A study of organic compounds, reactions, and reaction mechanisms, emphasizing their biochemical significance. Laboratory. Prerequisite: Chemistry 104. *A. Leegwater*.

261 Organic Chemistry I (5). F A detailed study of organic compounds, their synthesis and reactions, presented within the framework of modern physico-chemical theory, together with an introduction to modern methods of analysis and identification. Laboratory. Prerequisite: Chemistry 104. *R. Blankespoor*.

262 Organic Chemistry II (5). S A continuation of Chemistry 261. Laboratory. Prerequisite: Chemistry 261. *R. Blankespoor, A. Leegwater*.

271 Environmental Chemistry (3). I, alternate years. A study of the chemistry of the atmosphere, natural water, and soils, with a special focus on environmental problems arising from the activities of humans, including a study of acid precipitation, greenhouse gases, ozone depletion, urban and indoor air pollution, water and soil pollution, solid and hazardous waste disposal, and risk assessment all presented within the context of a Christian view of humans and nature. Prerequisite: Chemistry 253 or 261. *D. McCarthy*.

281 Laboratory in Environmental Chemistry (1). S, alternate years. Experiments and investigations devoted to chemical analysis of samples obtained from the atmosphere, hy-

drosphere, and lithosphere using EPA approved protocols involving both instrumental and wet chemical methods. Prerequisite: Chemistry 271. *D. McCarthy*.

295 Chemistry Seminar. F and S, no credit. A seminar devoted to an exploration of topics in current chemical research in both academic and industrial laboratories. Junior and senior chemistry majors must attend each semester; freshmen and sophomores intending to major in chemistry are encouraged to attend. *L. Louters, K. Sinniah*.

304 Physical Chemistry for the Biological Sciences (4). S A survey of physical chemistry with emphasis on the laws of thermodynamics, physical equilibria, transport phenomena, and enzyme kinetics. Topics are treated with life science applications. Prerequisite: Chemistry 104, a one-semester college level calculus course, or permission of the instructor. *R. DeKock*.

317 Physical Chemistry I (4). F A study of macroscopic properties of matter as described by chemical thermodynamics and kinetics. Major topics include: The laws of thermodynamics and their application to pure substances, chemical reactions, solutions, and physical and chemical equilibria, and reaction kinetics. Laboratory. Prerequisites: Chemistry 104, Mathematics 162, and a college physics course. *R. DeKock*.

318 Physical Chemistry II (4). S, alternate years. A study of the microscopic description of matter in terms of quantum mechanics and statistical mechanics. Major topics include: The structure, energy, and spectroscopy of atoms and molecules given by quantum theory, and the relationship between microscopic and macroscopic properties of matter (statistical mechanics). Laboratory includes a six-week project on a topic proposed by the instructor. Prerequisite: Chemistry 317. Not offered 2002-03.

323 Biochemistry I (4). * F A study of proteins, enzymes, carbohydrates, lipids, and membranes with an emphasis on the relationship of structure and function. Also included is the study of catabolism with primary focus on glycolysis, gluconeogenesis, glycogen metabolism, Krebs cycle, and oxidative phosphorylation. Prerequisite: Chemistry 253 or 262. *E. Arnoys*.

324 Biochemistry II (4). * S. A continuation of Chemistry 323. Topics covered are lipid metabolism, photosynthesis, biosynthesis of macromolecular precursors, the chemistry of the storage, transmission and expression of genetic information, biochemical dimensions of selected physiological processes, and philosophical and ethical issues related to biochemistry. Also listed as Biology 324. Prerequisite: Chemistry 323. *E. Arnoys, D. McCarthy.*

325 Advanced Organic Chemistry (4). * S, alternate years. A study of selected topics in organic synthesis or physical organic chemistry. In the laboratory individual projects involving multi-step syntheses are carried out based upon procedures found in the literature. All compounds prepared are characterized using spectroscopic methods and other instrumental techniques. Prerequisites: Chemistry 262 and 304 or 317. *R. Blankespoor.*

329 Instrumental Methods for Chemical and Biological Sciences (4). * S. The aim of this course is to expose students to several instrumental techniques in chemistry, biochemistry, and biotechnology. The course will cover the principles underlying common instrumental methods, surface analytical methods used for studies in chemical and biological materials, spectroscopic techniques, separation techniques, and thermal methods. A combination of lecture and/or laboratory will cover a number of instrumental techniques. Special emphasis will be paid to techniques such as nuclear magnetic resonance and mass spectrometry, which are essential to the chemical and pharmaceutical industries. An important aspect of this course is to provide students with “hands-on” experience on a number of instruments work, how they are best used, and what type of performance one can expect. In the laboratory, students have the option of choosing the types of instruments and/or experiments to investigate based on their intended major. The final six laboratory sessions will be devoted to an independent project, which will use a minimum of two instruments. Laboratory. Prerequisite: Chemistry 201 or 261/Mathematics 143. *K. Sinniah.*

330 Advanced Inorganic Chemistry (4). * F, alternate years. A study in the chemistry of metals and non-metals with emphasis on sym-

metry, structure-property correlations, and periodicity. Types of compounds discussed are ionic solids, cluster and cage compounds, and organometallics. For coordination compounds the stereochemistry, reaction mechanisms, spectra, and magnetism are treated in detail. Laboratory. Prerequisite: Chemistry 304 or 317. *D. Vander Griend.*

359 Seminar in Secondary Teaching of Chemistry (3). S. A course in perspectives on, principles of, and practices in the teaching of Chemistry on the secondary level. This course should be taken concurrently with Education 346. The seminar provides a forum for the discussion of concerns that develop during directed teaching. This course is part of the professional education program and may not be included in the major or minor in Chemistry. *Staff.*

383 Laboratory in Biochemistry (1). * F and S. A laboratory course designed to teach students modern biochemical separation and analytical techniques. Included in this course are the following topics: Exclusion, ion-exchange, affinity, and high performance liquid chromatography, agarose gel and polyacrylamide gel electrophoresis, ultracentrifugation, ultraviolet/visible spectroscopy, enzyme kinetics, and recombinant DNA techniques. Students will be required to carry out individual projects involving the purification and analysis of a biological macromolecule from cells or tissue. Also listed as Biology 383. Pre or co-requisite: Chemistry 323. *E. Arnoys, D. McCarthy.*

385 Internship in Chemistry (3). F and S. Internships in industrial or commercial chemistry laboratories or in non-profit chemistry laboratories will be arranged for qualified students. Students work in off-campus laboratories or offices for 10-12 (3 semester hours) or 13-15 (4 semester hours) hours per week throughout the semester. They will work under the supervision of an off-campus employer-supervisor and a faculty internship coordinator. Interns will meet with their faculty coordinator bi-weekly, will be required to keep a reflective journal, and must submit a final written paper summarizing their internship experience. The off-campus supervisor will send in an evaluation report on the work of the intern. To be enrolled in an in-

ternship, the student must have junior or senior standing, must have a cumulative GPA of 2.0 or better, an average GPA of 2.0 or better in all credited science and Mathematics courses, must have completed the second semester of Organic Chemistry (Chemistry 262) or equivalent, must complete an Internship Application Form, and must be approved by both the department and the off-campus employer. *L. Leegwater.*

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

395 Research Seminar. * F, I, and S. Library and laboratory research on a project selected in consultation with a faculty member. Each student will be required to present a seminar in the departmental seminar series and to write a formal report on the project. Normally open to juniors and seniors by permission of the chair and instructor under whom the work will be done. *R. DeKock.*

396 Perspectives in Chemistry (1). * F and S. Reflections on the discipline of chemistry: Its history, methodology, philosophy, cur-

ricular structure, key ideas, and concepts; its role as a central science in technology and society; and the responsibilities of its practitioners in industry and in academic and research institutions. Prerequisite: Junior or senior status in a chemistry program of concentration. *A. Leegwater.*

Off-Campus Offering

332 Environmental Chemistry. Principles and analysis of chemical movement and distribution in natural environments. Sampling and analytical methods are included for water, soil, and air. Work conducted both in natural habitats and the laboratory. Prerequisites: One year of general chemistry and one semester of either biochemistry or organic chemistry. Offered in conjunction with the AuSable Institute. See page 201.

Graduate Courses

590 Independent Study. * F, I, and S. *Staff.*

Chinese

Professor B. Carvill (chair)

Associate Professor L. Herzberg

Students can fulfill the two-year language requirement by taking the following four courses in Chinese:

COURSES

101 Elementary Chinese (4). F. An introduction to Chinese language and culture, stressing both spoken and written Chinese. After one-semester students will be able to carry on simple conversations in (Mandarin), Chinese, read dialogues written in Chinese, and understand some fundamentals of Chinese social values and ways of thinking. Approximately 300 Chinese "characters" will be introduced. *L. Herzberg.*

102 Elementary Chinese (4). F. A continuation of Chinese 101. Continued study of Chinese grammar, with equal emphasis on improving conversational proficiency and on reading and writing Chinese. Another 300 Chinese "characters" will be introduced for reading and writing and as a medium for gaining insight into Chinese culture. Prerequisite: Chinese 101 or permission of the instructor. *L. Herzberg.*

201 Intermediate Chinese (4). F. A continuation of Chinese 101. Continued study of Chinese grammar, with equal emphasis on im-

proving conversational proficiency and on reading and writing Chinese. Another 300 Chinese “characters” will be introduced for reading and writing and as a medium for gaining insight into Chinese culture. Prerequisite: Chinese 101 or permission of the instructor. *L. Herzberg.*

202 Intermediate Chinese (4). S. A continuation of Chinese 201. Completion of the study of basic Chinese grammar and further study of the Chinese writing system, with continued emphasis on both speaking and reading. Two hundred more “characters” are taught for reading comprehension and cultural understanding. *L. Herzberg.*

215 Advanced Conversation (4). F. This course is designed to develop advanced aural comprehension skills as well as advanced competence in spoken Chinese through exercises, drills, and conversation in class. Students will also continue their study of the written language by learning many new Chinese “characters” or pictographs. Prerequisite: Chinese 202 or permission of the instructor. *Q. Herzberg.*

216 Advanced Grammar and Composition (4). S. The systematic study of advanced grammar and composition. Students will learn many new Chinese “characters” as they improve their skills in written Chinese. Conversation practice will also be emphasized. Prerequisite: Chinese 215 or permission of the instructor. *Q. Herzberg.*

217 Introduction to Modern Chinese Literature: 1911 to the Present (3). F. A continuation of Chinese language study and an introduction to works written by major Chinese authors from 1911, when Chinese literature was first written in the modern vernacular, to the present, as well as selected readings on Chinese history, society, and culture. Prerequisite: Chinese 216 or permission of the instructor. *Q. Herzberg.*

218 Further Studies in Modern Chinese Literature: 1911 to the Present (3). S. This course builds on Chinese 217 and deals with literary texts of greater linguistic difficulty. It also includes further language study and selected readings on Chinese history, society, and culture. Prerequisite: Chinese 217 or permission of the instructor. *Q. Herzberg.*

Classical Languages

Professors K. Bratt, M. Williams

Associate Professor M. Gustafson (chair)

Assistant Professor J. Winkle

The department offers four programs of concentration in Classical Studies, Classical Languages, Greek Language, and Latin Language. The program in Classical Studies combines some study of one of the languages with a broad study of Graeco-Roman civilization and its later influence. The Classical Languages program is designed for graduate studies, the Greek language program is for pre-seminarians 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.

Courses not normally scheduled may be offered to qualified students on an individual basis so that specific concentrations may be completed.

CLASSICAL STUDIES MAJOR

Two 200-level Greek or Latin courses
Classics 211
Classics 221
Classics 231
Philosophy 251
Two from History 232, 261, or 262
Two from Art History 101, 233, 235, Greek 101, 102, History 262, 263, 264, Latin 101, 102, Philosophy 312, Religion 241, 341, CAS 325, 320, or additional courses in the selected languages
One interim or Classics 241 or 242

CLASSICAL LANGUAGES MAJOR

Six from Latin 101, 102, 201, 202, Greek 101, 102, 201, 202, 203, or 207
Six from Latin 205, 206, 300, 302, 304, 305, 391, Greek 201, 202, 203, 205, 206, 207, 303, or 304 (at least one 300-level course must be taken in each language)
Two from Classics 211, 221, 231, or History 261
One interim or Classics 241 or 242

GREEK MAJOR

Six from Greek 101, 102, 201-207, 303, or 304
Two from Greek 101, 102, 201-207, 303, 304, 395, Classics 211, 221, 231, or History 261 (at least one 300-level Greek course)

CLASSICAL STUDIES MINOR

Two 200-level Greek or Latin courses
Classics 211
Classics 221
Classics 231
History 261
One elective drawn from Greek 101 or 102, Latin 101 or 102; additional work in intermediate or advanced Greek or Latin courses; History 232 or 262; or Philosophy 251

GREEK MINOR

Five from Greek 101, 102, 201-207, 303, 304, or 395
One Classics course

LATIN MAJOR

Six from Latin 101, 102, 201, 202, 205, 206, 300-305, or 391
Three from Latin 101, 102, 201, 202, 205, 206, 300-305, 391, Classics 211, 221,

231, or History 261 (at least one 300-level Latin course)

LATIN MINOR

Five from Latin 101, 102, 201, 202, 205, 206, 300-305, or 391
One Classics course

LATIN SECONDARY EDUCATION MAJOR

Latin 101
Latin 102
Latin 201
Latin 202
Latin 205
Latin 206
Latin 300
Latin 302
Latin 304
Latin 305

LATIN SECONDARY EDUCATION MINOR

Latin 101
Latin 102
Latin 201
Latin 202

At least 6 hours of electives from Latin 205, 206, 300, 302, 304, or 305

Students who have completed one year of high school Latin should enroll in Latin 101; two years in Latin 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 core requirement for language with one college course); those with three years, in either Latin 202 or 205; more than three years, in Latin 205 or 206. Students whose qualifications permit them to omit Latin 201 or 202, should consult the department chair regarding special major or minor programs. Those who have completed one year of college Latin should enroll in Latin 201.

The core requirement in the arts may be met by Classics 221 and 231. Classics 231 may be part of the teaching minor in the academic study of religions. Completion of Latin 202 or Greek 202 (or their equivalents) satisfies the college language requirement. Classics 211 also meets the core literature requirement.

COURSES

211 Classical Literature (3). The major works of Greek and Roman literature from Homer to Augustine are studied. Primary attention is devoted to the origins and development of Greek epic, lyric, drama, and historiography, and to their transformation in the literature of Rome and the church fathers. Artistic and archaeological evidence supplements the study of the texts. *Staff.*

221 Classical Art and Architecture (3). S. This is a study of the major arts 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 Greek and Roman culture. *K. Bratt.*

231 Classical Mythology (3). F and S. This is 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 major art works of both cultures are studied via slides. Attention is given to various interpretations of the myths and the works of art they have influenced over the course of Western culture. Lectures, discussions, and written reports. *M. Williams, J. Winkle.*

241 Vocabulary Development Through Latin and Greek Roots (2). F. A study of the Latin and Greek origins of English vocabulary. Students will learn to identify the Latin and Greek bases of English words and so be able to enlarge their vocabulary and to give it etymological precision. Students with a special interest in scientific vocabulary may prefer Classics 242. Not offered 2002-03.

242 Biological and Medical Vocabulary from Greek and Latin (2). F and S. A study of the basic Greek and Latin components of scientific terminology, especially intended for students in biology and the health sciences. Non-science students may prefer Classics 241. *M. Williams.*

Greek

101 Elementary Greek (5). F. A beginning study of classical Greek with emphasis on the essentials of grammar and basic vocabulary. *J. Winkle, M. Gustafson.*

102 Elementary Greek (5). S. A continuation of Greek 101. Completion of the text and the reading of selected prose passages. Completion of this course allows the student to read works like the New Testament with the help of a grammar and dictionary. *J. Winkle, M. Gustafson.*

201 Intermediate Greek A (3). F. Readings in the early dialogues of Plato. Special emphasis is put on gaining reading proficiency in Greek prose. Prerequisite: Greek 102. *K. Bratt.*

202 Intermediate Greek B (3). S. This course includes readings in Homer's *Odyssey*, with special emphasis put on gaining reading proficiency in Greek poetry and to exploring some major themes of Greek religion and mythology. Prerequisite: Three semesters of Greek. *J. Winkle.*

203 Readings in Herodotus (3). F. In this course, special emphasis is placed on gaining reading proficiency in Greek prose, with some attention to the characteristics of Herodotus as historian in relation to Thucydides. Not offered 2002-03.

205 New Testament Greek: The Gospels (3). F. In this course, the Gospel of Mark is read with 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: Greek 102. *M. Gustafson.*

206 New Testament Greek: The Epistles (3). S. A study is made of some of the Pauline Epistles. Prerequisite: Greek 205. *M. Gustafson.*

207 Greek Tragedy (3). S, alternate years. This course includes a close reading of at least one Greek tragedy with attention to its poetic and dramatic qualities. Those matters of Greek culture, literary tradition, and history that help us to understand the tragedies are also noted. Prerequisite: Three semesters of Greek. Not offered 2002-03.

303 **Advanced Greek Prose** (3). * F. A study of selected Greek prose authors, based on student interest and demand. Authors studied may include Thucydides, Plato, Aristotle, Xenophon, Polybius, the Attic orators, or the Church fathers. Prerequisite: Four courses in Greek or permission of the instructor. *M. Williams*.

304 **Advanced Greek Poetry** (3). * S. A study of selected Greek poets, based on student interest and demand. Authors studied may include Hesiod, the lyric and elegiac poets, Aristophanes, Menander, or Callimachus; tragic poetry not otherwise covered in the curriculum may also be studied. Prerequisite: Four courses in Greek or permission of the instructor. *Staff*.

395 **Special Topics in Ancient Greek** (3). Independent study of special topics or authors not ordinarily covered in the rest of the Greek curriculum. Prerequisites: Greek 301 and 302. Offered as needed. May be repeated provided the course content is different.

Latin

101 **Elementary Latin** (4). F. For students who 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. *M. Williams*.

102 **Elementary Latin** (4). S. A continuation of Latin 101. Emphasis is placed on grammar and the early reading of longer selections of authentic Latin dealing with Roman history and culture. Prerequisite: Latin 101 or its equivalent. *M. Williams*.

201 **Intermediate Latin** (4). 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. *K. Bratt*.

202 **Intermediate Latin II** (3). This course involves a study of selected prose and poetry in Latin, which may include the *Metamorphoses* of Ovid and the *Confessions* of Augustine. Prerequisite: Three years of high school Latin or Latin 201. *M. Williams*.

205 **Latin of the Late Republic and Early Empire** (3). This class includes readings in the prose and poetry of major writers, which are selected to survey the development of classical Latin literature and to serve as an introduction to the advanced genre courses. Prerequisite: Latin 202, three years of high school Latin, or permission of the instructor. *J. Winkle*.

206 **Late Latin Literature** (3). This course includes readings in Latin prose and poetry of the later empire and the middle ages from both Christian and non-Christian authors. Prerequisite: Latin 202, 205, or permission of the instructor. This course satisfies the core requirement in Literature for students who satisfy their foreign language requirement with other courses. *M. Gustafson*.

300 **Latin Epic Poetry** (3). * F, alternate years. A close reading of selections from Vergil's *Aeneid* and/or other works of Latin epic literature. Prerequisite: Latin 205 or 206. Not offered 2002-03.

302 **Latin Philosophical Literature** (3). * S. 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: Latin 205 or 206. Not offered 2002-03.

304 **Latin Historical Literature** (3). * S. 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: Latin 205 or 206. *Staff*.

305 **Latin Lyric** (3). * F, alternate years with Latin 300. Selected poetry from such authors as Vergil, Catullus, Horace, and the elegiac poets, with attention to metrics and the Greek heritage in lyric. Prerequisite: Latin 205 or 206 or the equivalent. *Staff*.

391 **Special Topics in Latin** (3). Independent study of special topics. Offered as needed. May be repeated provided the course content is different. Prerequisite: At least two 300-level courses in Latin or permission of the instructor.

Communication Arts and Sciences

Professors R. Bytwerk (chair), *M. Fackler, †R. Fortner, D. Freeberg, J. Korf, C. Plantinga, W. Romanowski, Q. Schultze, **H. Sterk

Associate Professors M. Page, J. VanderWoude

Assistant Professors P. Goetz, K. Groenendyk, G. Pauley, *S. Sandberg, T. Ter Haar

Adjunct Associate Professor R. Buursma

Instructors N. Ofulue, C. Smit

The department serves students intending careers in communication-related professions and those who wish to understand the society in which they live and to improve their ability to communicate. The department offers specializations in speech pathology and audiology, film studies, rhetoric and communication, mass media, and theatre. The department also offers group majors in business communication and digital communication. Students with a GPA of 2.5 and above are encouraged to do an internship, either locally or with the Chicago Metropolitan Program, the American Studies Program in Washington, D.C., or the Los Angeles Film Studies Center. The department's internship advisor is J. Korf.

The group minor in journalism, a program involving the department, is described under the Department of English, page 126.

FILM STUDIES

CAS 140

CAS 251

CAS 281

CAS 282

CAS 284

CAS 352

CAS 383

Two courses from: CAS 218, 219, 248, 249, 250, 316, and 351

Two courses from: CAS 230, 238, 254, 330, and 382

One CAS elective, which may be an interim

MASS MEDIA

CAS 140

CAS 230

CAS 238

CAS 248

CAS 249

CAS 250

CAS 254

CAS 352

One course selected from CAS 281, 282, 284, 318, 382, 383, 395, and 399

One course selected from CAS 285, 316, 319, 346, 351, 354, or three hours of audio practicum

Two CAS electives, one of which must be at the 300-level; one may be an interim

RHETORIC AND COMMUNICATION

CAS 140

CAS 141

CAS 205

CAS 238

CAS 305

CAS 327

CAS 352

Two courses selected from CAS 200, 203, and 211

One course selected from CAS 240, 253, 260, and 270

One course selected from CAS 230, 318, and 330

One CAS elective, which may be an interim

SPEECH PATHOLOGY AND AUDIOLOGY

CAS 140

CAS 210

CAS 212

CAS 215

CAS 216

CAS 311

CAS 344

CAS 345

CAS 352

CAS 384

CAS 385

CAS 387

Three electives selected from CAS 200, 203, 238, 240, 260, 361, 362, 386, or an ap-

proved interim. Other CAS courses may be approved as electives in consultation with the student's academic advisor.

Cognates

Biology 115
English 334
Mathematics 143
Psychology 201

SPEECH PATHOLOGY AND AUDIOLOGY

Students who wish to enter professions dealing with speech pathology and audiology may qualify for the degree of Bachelor of Arts in Speech Pathology and Audiology. The program prepares students for graduate work in speech pathology or in audiology. Students should apply to accredited graduate programs during the fall semester of their senior year. Admission into graduate programs in speech pathology or audiology is very competitive. Students must have a minimum of a 3.0 grade point average to be considered. The advisors for the program are J. Vander Woude, Director of the Speech Pathology and Audiology Program in the Communication Arts and Sciences Department and P. Goetz of the Communication Arts and Sciences Department.

The liberal arts requirements include one course in each core category: Developing a Christian Mind, First-Year Prelude, Written Rhetoric, Research and Information Technology, History of the West and the World, Philosophical Foundations, Biblical Foundations I or Theological Foundations I, Biblical Foundations II or Theological Foundations II, Societal Structures in North America, Literature, Foreign Language, The Arts, Cross-Cultural Engagement, and three semester hours in the Health and Fitness category. Other specified core courses that also serve as cognates for the major are: CAS 140, 352, Psychology 151, Mathematics 143, Physics 223 and Biology 115. Additional required cognates include Psychology 201 and English 334.

THEATRE

CAS 140
CAS 203

CAS 217
CAS 218
CAS 219
CAS 316
CAS 320
CAS 321
CAS 352
One course selected from CAS 238, 327, or 383
One course selected from CAS 248, 319, or 323
Two CAS electives, one of which may be an interim

BUSINESS COMMUNICATION GROUP MAJOR

CAS 140
CAS 352
One course selected from CAS 101 and 240
Two courses from CAS 253, 260, 285, 305, 354, and 399
One course from CAS 200, 248, or English 262
Business 160
Business 203
Business 380
Economics 221
Economics 222
One course from Business 365, 381, or 382
One Economics or Business elective at the 300 level

Cognates

Mathematics 143, 243, or 343
Three hours of computer science, including Computer Science 130

DIGITAL COMMUNICATION GROUP MAJOR

CAS 140
CAS 141 or 143
CAS 230
CAS 238
CAS 248, 249, or 250
CAS 305
CAS 330
CAS 352
Computer Science 105
Computer Science 110
Computer Science 120
Computer Science 130
Computer Science 135
Computer Science 140
Computer Science 145
Computer Science 185

Computer Science 210
Computer Science 235
Computer Science 275
Computer Science 392
Mathematics 132
Mathematics 143

Cognates

Mathematics 132
Mathematics 143

CAS MINOR

CAS 140
CAS 200
CAS 203 or 217
CAS 230 or 254
CAS electives (6 semester hours)

MEDIA STUDIES MINOR

CAS 143
One Film course
One Mass Media course
Four electives from Film and Mass Media

ELEMENTARY EDUCATION

CAS MINOR

CAS 203
CAS 214
CAS 215
CAS 217
CAS 254
Two CAS electives

SECONDARY EDUCATION CAS MINOR

CAS 140
CAS 200
CAS 203 or 217
CAS 248 or 250
CAS 254 or 281
CAS 218 or 316
One elective

Prerequisite to admission to any of the department's specializations is CAS 140, one other CAS course, and a minimum average GPA of 2.0 for CAS courses completed.

The core requirement in Rhetoric in Culture may be met by CAS 100 (not open to first- and second-year students), 101, 140, 141, 143, and 214. The department offers an exemption exam for CAS 101. Fine Arts core requirements can be met by CAS 140 for juniors and seniors only.

ELEMENTARY EDUCATION FINE ARTS GROUP MAJOR AND MINOR

All Fine Arts Group Majors must complete at least 36 semester hours of courses in Art, Music, and Communication Arts and Sciences. All minors must complete at least 24 semester hours of courses in these three areas. All majors and minors must take Art 215; Communication Arts and Sciences 214; and Music 238. In addition, students majoring in Fine Arts must complete a sequence of courses from two of these disciplines chosen in consultation with a fine arts education advisor. Students minoring in fine arts must complete a sequence of courses from one of these disciplines and some additional electives chosen in consultation with a fine arts advisor. Fine Arts Advisors: J. VanReeuwijk, Art; R. Buursma, Communication Arts and Sciences; and D. Topp, Music.

COURSES

100 **Fundamentals of Oral Rhetoric** (2). F and S. The primary aim of this course is to increase competence in oral communication. The emphasis is on the composition and delivery of speeches. Does not meet core for CAS majors. Open to juniors and seniors only. *Staff.*

101 **Oral Rhetoric** (3). F and S. Students examine the principles of oral and visual rhetoric in this course, with an emphasis on guided practice in the development of effective speeches. The course leads students to understand the role of rhetoric in society, to think critically about rhetorical situations and practices, and to gain proficiency in the art of rhetoric. *Staff.*

140 **Communication and Culture** (3). F and S. This course examines the ways in which communication is used to create, maintain, and change culture. Students have the opportunity to apply a basic understanding of the concepts of communication and culture to a range of contemporary social issues, cultural texts, and communication practices. Emphasis is given to rhetorical and discussion methods to help students learn about analyzing and constructing oral and written arguments and to work cooperatively doing a research project for class presentation. *Staff.*

141 **Visual Rhetoric** (3). S. This course is a study of the rhetoric of images, how images create meaning, and how images are used to persuade. It leads students to understand the relationship between the rhetoric of images, the various audiences for those images, and their social contexts. Students learn to critique the construction of images, the ethical use of images, and the various meanings of images. *K. Groenendyk.*

143 **Media and Culture** (3). S. Exploration of the role played by mass communication in shaping culture. Critical survey of individual media institutions to examine the information they distribute, their techniques of expression and communication, and the influence they bring. Special attention paid to current trends in the media industries, to media ethics and regulation, and to the development of students' media literacy. *C. Plantinga.*

200 **Advanced Oral Rhetoric** (4). S. Composition and presentation of types of speeches, participation in various types of speeches, participation in various types of discussion, readings in rhetorical theory, and criticism of selected contemporary speeches. Prerequisite: CAS 100, 101, or equivalent. *R. Bytwerk.*

203 **Introduction to Performance Studies** (3). F and S. An introduction to performance as a means of analyzing, appreciating, and celebrating literature. By providing training in the principles and techniques of performing literature before an audience, this course expands students' understanding of the relationships between text and performance, literature and human action, and written and oral forms of discourse. Genres of literature examined include poetry, prose, and oral history. This course is designed for students considering careers in theatre, rhetoric, radio, television, or education. *T. TerHaar.*

205 **American Voices** (3). This course examines American oratory as an art form, an influence on the American experience, and a reflection of American culture. Students will develop an understanding of oratory as an aesthetic and practical art, deepen their knowledge of the American rhetorical tradition in its historical and intellectual contexts, and learn how the art of public speaking shapes our understanding of ourselves and our world. Emphasis is given to methods of critical listening

and analysis and to how oratory has been transformed by the electronic age and its focus on the image. Not offered 2002-03.

210 **Anatomy and Physiology of the Speech, Hearing, and Language Mechanisms** (4). F. A study of the anatomic and physiologic bases for the development and use of speech, language, and hearing. The course focuses on the central and peripheral auditory mechanisms of the human body, and on the respiratory, phonatory, and articulatory mechanisms required for speech production. Prerequisites: Biology 115 and CAS 215. *P. Goetz.*

211 **Argumentation and Advocacy** (3). S. A study and application of basic principles of argumentation and advocacy. This course focuses on the dynamics of oral argument—ethical dimensions, use of language, informal logic, use of evidence and appeals, structure, and interactions with other arguments. Through analysis and practice, students will learn not only how to argue within academic contexts, but how to apply argumentative reasoning to everyday communication. *G. Pauley.*

212 **Speech and Hearing Science** (4). S. Application of the scientific method to the studies of hearing, speech perception, and production. Topics include the introduction to basic acoustics, acoustic theory of speech perception and production, psychophysical methods of measuring hearing thresholds, acoustic phonetics, and synthesized speech. Not offered 2002-03. *P. Goetz.*

214 **Creating Communication Arts in the Classroom** (3). F and S. This course addresses how the communication arts, such as creative drama, reader's theater, and puppetry facilitate learning in educational settings. Students learn to analyze verbal and non-verbal communication, they engage in the strategies of rhetoric (such as organization, invention, and style) appropriate to the learning process, and they apply these skills and knowledge in school settings. *R. Buursma.*

215 **Introduction to Speech Pathology and Audiology** (3). F and S. A general introduction to speech-language pathology and audiology. These rapidly growing interdisciplinary professions are devoted to helping individuals manage or overcome communication challenges. Communication is a God-given gift

that allows us to be social beings. When people have difficulty communicating, it affects almost all aspects of their lives. Students will gain a general understanding of prevention, evaluation, and rehabilitation issues for persons with speech, language, and hearing disorders in clinical and educational settings. *J. Vander Woude.*

216 Phonetics (3). S. A study of phonetic theories and the use of International Phonetic Alphabet symbols in analyzing, categorizing, and transcribing the sounds of American English. The course emphasizes understanding of the processes involved in the production of specific phonemes. *P. Goetz.*

217 Principles of Theatre (3). F and S. This course studies the theatre through analysis of its artistic principles, genres, and forms. This foundational course concentrates on script analysis, major classical and modern theory, and critical methodology. *D. Freeberg, S. Sandberg.*

218 Principles of Acting (3). F. An introduction to the art of acting. Through readings, discussions, and numerous in-class exercises the students will become acquainted with major acting theories. The course is for students interested in theatre-related professions, as well as for students wishing to deepen their understanding of theatre and dramatic literature. Prerequisite: CAS 217 or permission of the instructor. *D. Freeberg.*

219 Principles of Production Design (3). F. A study of the basic principles, theories, and applications of technical production and design for theatre, television, and film. This course builds on principles taught in CAS 217 and includes lectures, lab demonstrations, and contextual readings. The course seeks to introduce students to all aspects of the craft including the areas of scenic, property, costume, make-up, and sound and lighting production, while providing constant comparison and contrast between the distinct visual media of theatre, television, and film. Prerequisite: CAS 217. *D. Leugs.*

220 Calvin Theatre Company (1). F and S. Membership in the class is limited and is determined annually by audition/interview. 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 six semester hours may be applied to the minimum requirements for graduation, and no more than three to the major. Prerequisite: A GPA of 2.0 or higher. *M. Page.*

230 The Media and the Public (3). F and S. The roles of the mass media in society and culture. The course emphasizes the changes occurring in the means of communication, the control of media systems, the audiences for media products, and the changes introduced into American life by the press, telegraph, telephone, photograph, cinema, wireless, radio, television, satellites, and computers. *Staff.*

238 Theory and Communication (3). F and S. An examination of the significance and role of theory in understanding the nature of human communication. The course focuses on the fundamental elements of communication processes, the assumptions that underlie communication theory, the similarities and differences between theoretical approaches, and the means of evaluating theoretical perspectives, including a Christian critique of communication theories. Prerequisite: CAS 140. *C. Smit.*

240 Group Communication (3). S. Small group communication theory and practice. Students participate in group projects leading to class presentations. Topics include leadership, discussion, roles, consensus, organization, decision-making, leadership, and persuasion. Standards for ethical conduct are considered throughout the course. *Staff.*

248 Writing for the Media (3). F. An introduction to the content, styles, and formats of media scripts. The course emphasizes the differences in media writing compared with more familiar forms of writing, the role of the script as text in producing media programs, the styles of writing used (journalistic, dramatic, polemical, and emotive), and the technical requirements for scripts used to focus the work of directors, actors, camera, and sound technicians, editors and mixers in creating a media product. Writing for Public Relations will be offered in the fall. Also listed as English 248. Prerequisite: English 101. *Staff.*

249 Audio Design and Aesthetics (4). S. An introduction to the aesthetic principles that

govern the production of media programs, focusing on sound. Students produce a variety of short audio programs in lab situations. The course also introduces students to the process by which media programs are produced, the aesthetic and ethical challenges that this process demands, and how Christians working in the media should respond to such demands. *R. Fortner.*

250 Video Production (4). F and S. An introduction to the theory and practice of video program composition and production. Various program formats are discussed and evaluated in light of particular communication principles and needs. Students gain extensive experience with portable and stationary video cameras, recorders, switchers, and related technologies. Lighting, audio recording, and mixing principles are analyzed and demonstrated. *J. Korf.*

251 Introduction to Cinema (3). F A study of the development and structure of cinema as an art form and as a cultural medium. The course aims to develop the students' understanding of cinematic language and to guide them in assessing films and film values. Course work includes readings in film history and criticism as well as the viewing and analysis of movies. Also listed as English 251. *R. Anker.*

253 Intercultural Communication (3). F and S. An examination of the anthropological principles relating to cross-cultural communication. This examination requires an extensive comparison of the components of cultural systems and the nature of cultural dynamics. The areas of application include government, business, Peace Corps, development, and mission work, with special emphasis on the last two. Special topics include developing an appropriate attitude regarding indigenous cultures and the management of culture shock. Also listed as Sociology 253. *T. Vanden Berg.*

254 Television Criticism (3). * S. A study and critique of important cultural and artistic forms in television. This course is a first, a critical study of some of the finest drama produced for public television in Britain and the United States, and second, a critical examination of the dominant myths and themes in popular drama, including soap operas, situation comedies, made-for-television films,

news, and commercials. Students use traditional and contemporary criteria to interpret, explain, and evaluate programs from a Christian perspective. They also learn about how the commercial and public television industries operate. Topics include: The relationship between program content and social values, the impact of television on children and the family, and television's treatment of God and religion. *Q. Schultze.*

260 Interpersonal Communication (3). S. The interpersonal communication opportunities and problems faced by Christians as they seek to live the life of faith in contemporary society. The course focuses on the theories and the practice of interpersonal communication. Topics include the elements of dyadic communication, shyness, gender, conflict management, and relational enrichment. *N. Ofulue.*

270 Communication and Gender (3). F A study and Christian evaluation of the relations between communication and gender, especially in interpersonal relationships, family, business, religious organizations, and educational institutions and religious settings. *N. Ofulue.*

281 American Film (4). F The study of American film as an art form, including technology, industry, and the system of representation and communication from the silent era to the present. This course investigates how Hollywood films work technically, artistically, and culturally to affirm and challenge images of America. Films considered represent major expressions of the classical Hollywood style and diversions from that style. Topics include film technique and style, narrative conventions and genres, the Hollywood studio and star systems, directors, and ideologies. *W. Romanowski.*

282 World Cinema (4). F and S. An introduction to significant film movements outside the United States. Topics include the early history and development of basic cinematic principles, the differences between the "Hollywood style" and the narrative forms developed in Europe, Asia, and the Third World, and the response of various film industries to the dominance of the American cinema. *C. Plantinga.*

284 Critical Approaches to Film (4). F An introduction to the key concepts and cultural paradigms employed in the study of film. Students are introduced to the diverse ways in

which films are examined and critiqued, central theoretical, ethical, and critical issues surrounding the study of film, and major film theories based on cognitive, psychoanalytical, ideological, semiotic, structural, and feminist perspectives. Various schools of film criticism (e.g., formalist, auteur, genre, humanist, and religious) are considered. Prerequisite: CAS 251, 281, or permission of the instructor. *W. Romanowski*.

285 Advertising and Public Relations (3). F and S. How and why organizations use advertising and public relations to influence various publics. The course emphasizes the historical development of advertising and public relations, as well as current issues in these industries. *Staff*.

303 Community-based Drama (3). This course combines readings and field work in ethnography and community-based drama with performance as a method of cultural analysis, as a means of interpreting and conveying cultural texts, and as a tool for creating of empathy. Topics include cross-cultural performance, storytelling, conversational analysis, community-based drama facilitation, and the creation and performance of oral histories and personal narratives as theatrical texts. Not offered 2002-03.

305 Persuasion and Propaganda (3). * F and S. The theory and practice of persuasive communication. Topics include theory and research of persuasion, improving personal persuasive abilities, recognizing and resisting persuasive strategies, and the role of propaganda in modern society. Examples for analysis are taken from advertising, religion, sales, political campaigns, and democratic and totalitarian propaganda. *R. Bytwerk*.

311 Child Language Development (3). F. An examination of early language development research in phonology, morphology, syntax, semantics, and pragmatics. Theories of language acquisition and implications for practice are examined. Particular attention is given to the role of adults in language development and to the relationship between language development and cognitive development. Also listed as Education 311. Prerequisites: An introductory course in Psychology or Education or permission of the instructor. *P. Goetz*.

316 Principles of Directing (4). S, alternate years. An introduction to the theory of directing. Through readings, play attendance, discussions, and exercises, the students will develop a basic understanding of the directing process and an appreciation for the art of directing. This course is for students interested in theatre-related professions as well as for students wishing to deepen their understanding of theatre and dramatic structure. Prerequisites: CAS 217 and 218, or permission of the instructor. Not offered 2002-03.

318 American Politics and Mass Media (3). F. A survey of the relationship between American politics and the mass communications media. The course covers the way the federal government, through its regulations and its dissemination of information, affects the operations of the media, and how the media influence the social and political values of Americans and the functioning of the political system. Also listed as Political Science 318. *G. Pauley*.

319 Topics in Advanced Production Design (3). An advanced study of the principles of scenic design and production for the theatre, and the principles of art direction for television and film. The course builds on the introductory scenic design concepts taught in Introduction to Design, CAS 219, and includes lectures, workshops, discussions, lab demonstrations, student design, and scenic painting projects and development of competence in theatrical scenic design and/or film art direction. Special attention is paid to the communication of design ideas in the form of written concept descriptions, drafting, sketching, rendering, painting, and modeling. The course may be repeated if the topic is different. Prerequisite: CAS 219 or permission of the instructor. Not offered 2002-03.

320 History of Theatre and Drama I (3). * F, alternate years. A historical and analytical study of theatre and drama from its origins to the nineteenth century. Not offered 2002-03.

321 History of Theatre and Drama II (3). * F, alternate years. A continuation of CAS 320. A historical and analytical study of theatre and drama from the nineteenth century to the present. *S. Sandberg*.

323 Scene Studies for Actors and Directors (3). S. An advanced study of the principles of acting and directing for the theatre and television. Through lectures, demonstrations, readings, rehearsals, and exercises, students will develop competence in the aesthetic processes of acting and directing. Students are required to produce performance quality work for both stage and camera. Prerequisites: CAS 218 and 316. *S. Sandberg, M. Page.*

327 Communication Criticism (3). Students will learn to critically evaluate a wide range of communication, such as public address, drama, film, television, and news. Students will read articles of communication texts analyzed by the articles. Through their analysis, students gain a better understanding of how communication texts can be effective, what their possible meanings might be, and what implications the texts have for their audiences and situations. In addition, students will learn methods used to analyze communication texts. Not offered 2002-03.

330 Global Media, Global Culture (3). * I. This course examines communication occurring across international borders, with special attention to the development of a global culture based in media flow. Topics include the history, use and regulation of international communications technologies, informational and cultural impacts of media flow, international law, and the role of media in international politics, economics, culture, and religion. It includes significant attention to the development of global media organizations and their impacts on indigenous culture. Not offered 2002-03.

344 Evaluation Procedures in Audiology (4). F and S. The study of the classification of hearing disorders and the behavioral and electrophysiological measurement of hearing, including subjective and objective testing procedures. This is a distance education course transmitted to Calvin from Michigan State University. Students attend a laboratory session at MSU one day a week. Prerequisites: CAS 210 and 212. *J. Elfenbein, P. Goetz.*

345 Aural Rehabilitation (3). S. The study of the fundamental aspects of auditory rehabilitation, including individual and group amplification systems, auditory training, speechreading, and counseling with children

and adults. This is a distance education course transmitted to Calvin from Michigan State University. Prerequisites: CAS 210 and 212. *J. Elfenbein, P. Goetz.*

346 Internship in Communication (4). F and S. Students work in profit or non-profit communication under the supervision of a professional. Typical placements include public relations or advertising agencies, broadcast or cable stations, video production companies and the like. A journal and seminar participation are required. Grading is based on the professional's evaluation, the student's daily journal, and seminar participation. Prerequisites: Junior or senior status and permission of the department. *J. Korf.*

351 Advanced Media Production (4). F The intensive study and production of video in a particular style or genre. The course focus, designated by a subtitle, will alternate between documentary, narrative and other styles and genres of video and television, and may include field and/or studio production and multimedia. The style or genre will be thoroughly investigated, with emphasis on its creative, ethical, and technical requirements and skills. Students will produce their own work in a digital video format. May be repeated for credit when course focus varies. Prerequisite: CAS 250 or consent of the instructor.

352 Communication Ethics (3). * F and S. This course examines the moral dimensions of human communication, exploring dilemmas in interpersonal, group, and mediated communication, with special reference to problems encountered in communications professions. While wrestling with cases and controversies, students also review and apply historic criteria for coming to reasoned moral judgment, including the contemporary voices of feminist, determinist, post-modern, and naturalist ethicists. Major Christian positions are reviewed and applied. Case studies are the focus of the class, with a variety of learning opportunities and encouragement for students to pursue personal learning objectives. Prerequisites: Biblical Foundations I, Developing a Christian Mind, and Philosophical Foundations. *M. Fackler, Q. Schultze.*

354 Communication Policy and the Public Sphere (3). The course focuses on the conflict between expectations of communication

in society and the realities of politics and economics. It examines specific disputes across a broad range of communications activities, including the arts and media, and details the different points of view brought to bear in creating and maintaining public debate. It includes issues such as the representation of social or ethnic groups in ownership of media and in communications professions, the interplay of social responsibility theory and the development of media monopolies. It also applies the principle of social justice in an examination of these political and economic issues. Not offered 2002-03.

361 American Sign Language I (3). F An introductory course in the use and comprehension of American Sign Language. Students will learn fingerspelling and basic signs. Additionally, students will be introduced to history of deaf communication, types and degree of deafness, general education issues, and insights into deaf culture.

362 American Sign Language II (3). S A continuation of American Sign Language I. Students will improve their comprehension and use of American Sign Language, including increasing their use of sign vocabulary and grammar. Students learn to use creative expression, classifiers, body postures, and signing space. Students will investigate the social, educational, and legal issues of the Deaf Community.

382 Film and Television Genres (4). The study of genres used in film and television production, including the western, comedy, musical, war, film, melodrama, film noir, science fiction, horror, the made-for-television movie, and the ensemble series. Not offered 2002-03.

383 Film Theory and Aesthetics (3). S An advanced study in film form and its implications, including narrative structure, editing and sound, acting, cinematography, production design, and their influence on viewers. The course also examines basic theoretical issues such as the relationships between film and reality, the nature of film as an art, adaptation, identification, and elicitation of emotional response. Prerequisites: CAS 284 and course work in the applied knowledge category, or permission of instructor. *C. Plantinga.*

384 Phonological Disorders (3). F A study of the nature and prevention of phonological disorders. This course introduces students to the theories associated with speech, sound development, dialectal variations, and the factors related to phonological disorders. Students will learn specific phonological assessment procedures and remediation principles for teaching the perception and production of speech sounds. Students also explore Christian responses to individuals with phonological disorders—responses that shape assessment and remediation principles. Prerequisites: CAS 215 and 216.

385 Seminar in Language Disorders (3). S A study of the assessment and intervention in childhood language disorders in phonology, syntax, semantics, pragmatics, and morphology. The course introduces students to psychometric and descriptive assessment. Students also examine the integration of Christian faith and practice in intervention strategies that concentrate on improving communication between the child and the communication partners in the home and school settings. Prerequisites: CAS 215, 311, or permission of the instructor. *J. Vander Woude.*

386 Clinical Practicum (2). F and S An introduction to the clinical practice of speech-language pathology within a Christian perspective. Specifically, students will become acquainted with applied clinical procedures in speech-language pathology. This course includes observation and/or direct contact with clients under close professional supervision. Students may repeat this course up to four times. Prerequisites: a GPA of 3.0, CAS 215, and instructor approval prior to registration. *J. Bates.*

387 Neurogenic Disorders (3). S A study of the nature, prevention, and treatment of neurogenic disorders. This course introduces students to the theories associated with neurogenic disorders. Students will learn specific assessment procedures and remediation principles for aphasia, apraxia, dysarthria, and traumatic brain injury. Students also explore Christian responses to individuals with disorders—responses that shape prevention, assessment, and remediation principles. Prerequisites: CAS 210, 215, and 216.

390 **Independent Study**. F, I, and S. Independent study of topics of interest to particular students, under the supervision of a member of the department. Prerequisite: Permission of the instructor. *Staff*.

395 **Special Topics in Communication** (3). F Topic: Lab Bills. *M. Page*.

399 **Senior Seminar** (3). F and S. This capstone course examines the application of a Reformed worldview to understanding communication and culture, especially communication-related vocations. It concentrates on the relationships between the Christian faith and professional communication and focuses on the ways in

which communication-related professions define professional activity and on the responsibilities that Christians have to work in and through professions. It also examines a Christian view of success, the importance of understanding one's gifts, finding and using mentors, committing to a location, mastering persuasive, honest interviewing and resume-writing, networking with reciprocity, overcoming Christian tribalism in a world economy, and being patiently flexible in the face of economic and cultural changes. Prerequisites: Biblical Foundations I or Theological Foundations I, Developing a Christian Mind, and Philosophical Foundations. *Q. Schultze*.

Computer Science

*Professors J. Adams (chair), *E. Fife, D. Laverell, L. Nyhoff*
Associate Professors H. Plantinga, K. Vander Linden
Assistant Professors H. Behrens, J. Frens, J. Nyhoff
Adjunct Professors J. Bradley, S. Leestma, R. Pruijm

More information on the computer science program can be found at our departmental web site (cs.calvin.edu).

BACHELOR OF COMPUTER SCIENCE (B.C.S.)

Computer Science 185
Computer Science 186
Computer Science 230
Computer Science 270
Computer Science 280
Computer Science 392
Computer Science 380 or 385 and 386
Five Computer Science electives, including an approved sequence. These electives must be chosen from Computer Science 210, 235, 247, 260, 275, 300, 305, 320, 330, 350, 360, 370; Engineering 304, 325; or an approved interim. At least three of these electives must be 300-level.

Cognates

Mathematics 156
Mathematics 161 and 162
Mathematics 243 and 255

Engineering 220

Three college laboratory science electives, including two, but no more than two, courses from one department. These electives must be chosen from Astronomy 201, 212; Biology 141, 205, 206, 242, 243 (or higher); Chemistry 103, 104, 201, 253, 261, 262 (or higher); Geology 151, 152, 201, 212 (or higher); Physics 133, 134, 235 (or higher); or Psychology 308, 331, 333, 334.

BACHELOR OF ARTS IN COMPUTER SCIENCE (B.A.)

Computer Science 185
Computer Science 186
Computer Science 230
Computer Science 270
Computer Science 280
Computer Science 392
Computer Science 380 or 385 and 386

Four Computer Science electives, including an approved sequence. These electives must be chosen from Computer Science 210, 235, 247, 260, 275, 300, 305, 320, 330, 350, 360, 370; Engineering 304, 325; or an approved interim. At least two of these electives must be 300-level.

Cognates

Mathematics 156

Mathematics 161 and 162 or 132 (with permission of the advisor)

Mathematics 243, 143 (with permission of the advisor), or 255

Pre-approved Sequences

Software Engineering: Computer Science 247 and 330

Computer Science: Computer Science 260 and 320

A minimum grade of “C” (2.0) in Computer Science 230, 270, or 280 is required for admission to a concentration major.

Students with a software engineering emphasis are encouraged to consider a Business minor. The suggested minor program is Economics 221 and 222, Business 160, 203, and two from Business 204, 315, 359, or 363.

COMPUTER SCIENCE MINOR

Computer Science 185

Computer Science 186

Computer Science 230

Computer Science 270

Computer Science 280

Computer Science 392

One 200 or 300-level Computer Science course (of at least 3 credit hours), or Engineering 220, 304 or 325

COMPUTER SCIENCE SECONDARY EDUCATION MINOR

A minor in computer science meets the requirements of a secondary education minor. Prior to the secondary education teaching internship, students must have the approval of the department. Criteria for approval are found in the *Teacher Education Program Guidebook*, available in the Education Department. Group concentrations involving mathematics, physics, business, and other disciplines are available.

INFORMATION SYSTEMS MAJOR (B.A.)

Business 160

Business 203

Computer Science 105

Computer Science 110

Computer Science 120

Computer Science 130

Computer Science 135

Computer Science 140

Computer Science 145

Computer Science 185

Computer Science 210

Computer Science 235

Computer Science 247

Computer Science 275

Computer Science 392

Economics 221

One course from Business 315, 363, Economics 325, or 326

One course from Business 360, 365, or 380

One course from Business 359 or Computer Science 380

Cognates

Mathematics 132

Mathematics 143

DIGITAL COMMUNICATION GROUP MAJOR (B.A.)

CAS 140

CAS 141 or 143

CAS 230

CAS 238

CAS 248, 249, or 250

CAS 305

CAS 330

CAS 352

Computer Science 105

Computer Science 110

Computer Science 120

Computer Science 130

Computer Science 135

Computer Science 140

Computer Science 145

Computer Science 185

Computer Science 210

Computer Science 235

Computer Science 275

Computer Science 392

Cognates

Mathematics 132

Mathematics 143

HONORS

The departmental honors program leads to graduation with honors in computer science. Beyond the requirements of the general honors program, this program requires further course work and a senior honors project. Details are available from the department web site. This program requires careful planning to complete, and students should normally apply for admission to the departmental honors program in their sophomore year.

COURSES**Service Courses**

101 Computing Concepts (1). F and S. An introduction to basic computer literacy, which assumes no previous computer experience. The course explores computer hardware, including processors, I/O devices, storage media and networks, and computer software including operating systems and applications software. Basic competence with word processing and Internet navigation will be acquired. *Staff.*

105 Computing Presentation (1). An introduction to the use of presentation software and desktop publishing software. Students will use current software packages to create presentation materials, newsletters, and brochures of publication quality. In addition to the mechanics of using the packages, layout and composition issues will be addressed. Prerequisite: Interdisciplinary 110, Computer Science 101, or 185, which may be taken concurrently. *Staff.*

110 Computing with the Internet (1). F and S. An introduction to the Internet — its' origins, current nature, and prospects for the future; a study of resources and tools for using, managing and creating materials for the Internet and the World Wide Web. Topics include information search and retrieval, communication, hypemedia, scripting, and cultural and ethical issues. Prerequisite: Interdisciplinary 110, Computer Science 101, or higher. *Staff.*

120 Personal Computer Administration (1). S. An introduction to the concepts and practice of configuring and administering a personal computer system. Topics include: Initial configuration, system administration,

hardware expansion, and networking. Students will learn to set up and maintain a computer system for a home or office. Prerequisite: Interdisciplinary 110 or Computer Science 101. *D. Lavarell.*

130 Computing with Spreadsheets (1). F and S. An introduction to numerical computation using spreadsheets, including basic operations, graphs and charts, decision making, data management, and macros. Prerequisite: Interdisciplinary 110, Computer Science 101, or higher. *Staff.*

135 Computing with Databases (1). S. An introduction to information processing with databases. This course introduces table structure, keys, queries, reports, and the relational database model. Prerequisite: Interdisciplinary 110, Computer Science 101, or higher. *Staff.*

140 Visual Computing (2). F An introduction to building window-based applications using “visual” programming tools such as Visual Basic, HyperCard, or Prograph. One emphasis is the design and implementation of graphical user interfaces. Another emphasis is to introduce the basics of programming, including algorithm development, input and output of values, selective and repetitive control, subprograms, and parameter passing. Prerequisite: Computer Science 130 or higher or permission of the instructor. *Staff.*

145 Object-Oriented Programming in Java (2). An introduction to object-oriented programming using the Java programming language. Coverage includes types, expressions, control structures, I/O, classes, parameterized methods, and standard Java libraries. Stand-alone graphical applications and web-based applets will be produced. Prerequisite: Computer Science 135 and two years of high school algebra or permission of the instructor. *Staff.*

153 Applied C++ I (1). An introduction to problem solving and programming for engineers using the language C++. Coverage includes types and expressions, libraries, functions and parameter passing, and control structures. Prerequisite: Mathematics 132 or 161, which may be taken concurrently. *Staff.*

154 Applied C++ II (1). An introduction to problem solving and programming for engineers using the language C++, continued from

Computer Science 153. Coverage includes files and I/O, arrays, and classes. Prerequisite: Computer Science 153. *Staff*.

155 **Applied C++** (2). S. An introduction to problem solving and program design for engineers using the language C++. Coverage includes I/O, types and expressions, libraries, functions and parameter passing, control structures, files, array processing, and the use of predefined classes (including templates). Prerequisite: Mathematics 132 or 161, which may be taken concurrently. *Staff*.

Computer Science Major Courses

185 **Introduction to Computing** (4). F and S. An introduction to computing as a problem-solving discipline. A primary emphasis is on object-oriented programming as a methodology for problem solving, including: The precise specification of a problem, the design of its solution, the encoding of that solution, and the testing, debugging, and maintenance of programs. A secondary emphasis is the discussion of breadth topics, including historical, theoretical, ethical and biblical perspectives on computing as a discipline. Laboratory. Prerequisite: Some prior programming experience recommended.

186 **Introduction to Data Structures with C++** (4). F and S. A continuation of Computer Science 185, using C++ classes to introduce and implement the elementary data structures including lists, stacks, queues, and trees. Advanced programming techniques such as indirection, inheritance, and templates are introduced; along with an emphasis on algorithm analysis, efficiency, and good programming style. Laboratory. Prerequisite: Computer Science 185 or permission of the instructor. *L. Nyhoff*.

210 **Introduction to Website Administration** (3). F This course prepares the student to administer a site on the World Wide Web. Topics include platform options, server installation, and configuration; creating forms in HTML; introduction to Perl and Common Gateway Interface (CGI) scripting; an introduction to Java applets; and legal and ethical issues. Prerequisites: Computer Science 185 or Computer Science 110 and a programming course (Computer Science 140, 145, or 154), or permission of the instructor. *J. Frens*.

230 **Data Structures and Algorithms** (3). F A systematic study of algorithms and their application to data structures, including arrays, lists, trees, heaps, hash tables, and graphs. Algorithms and data structures are analyzed in their use of both time and space, and the choice of data structure in problem solving is studied. Theoretical issues, such as optimality, best- and worst-case performance, and limitations of algorithms are studied, as well as implementation issues. Prerequisites: Computer Science 186 and Mathematics 156, which may be taken concurrently. *N. Plantinga*.

235 **Database Administration** (3). S, alternate years. This course prepares students to set up and administer database servers and clients on a network. Topics include an introduction to database design; SQL programming; principles for interfacing with a database server using ODBC and Visual Basic; issues in data management, integrity, and security; and legal and ethical issues. Prerequisites: Computer Science 135 and 145 or permission of the instructor. Not offered 2002-03. *K. Vander Linden*.

247 **Software Engineering** (3). S. A survey of software engineering principles including software project management, system and requirements analysis, the design and implementation of software, software quality assurance and testing, software maintenance, and the use of CASE tools. Laboratory. Prerequisite: Computer Science 230. *Staff*.

260 **Automata Theory and Formal Languages** (3). S. An introduction to formal computational models (automata), including finite state machines, push-down automata, linear bounded automata, and Turing machines; plus the languages automata recognize: Regular expressions, context-free languages, context-sensitive languages, and unrestricted languages. Universal Turing machines, problem solvability, and the P and NP complexity classes are also introduced. Prerequisites: Computer Science 230 and Mathematics 156. *R. Pruim*.

270 **Operating Systems** (3). F An introduction to the major concepts of operating systems. Topics covered include subprogram activation, system structure, memory management, correctness, timing, and process management including concurrent programming constructs. Prerequisite: Computer Science 186. *J. Adams*.

275 Network Administration (3). S, alternate years. This course prepares students to set up and administer TCP/IP, Novell, and/or Microsoft networks. Topics include network protocols such as TCP/IP and IPX; networking hardware including wiring, interface cards, hubs, switches, and routers; security and firewalls; and social, legal, and ethical issues. Prerequisite: Computer Science 145 or 185. *Staff.*

280 Programming Language Concepts (3). S. Principles and programming styles that govern the design and implementation of contemporary programming languages. Topics covered include language syntax, processors, representations, and styles. Several different languages will be introduced and examined in the light of the above principles. Laboratory. Prerequisite: Computer Science 186. *J. Adams.*

300 Special Topics in Computer Science: Compiler Design (4). S, alternate years. 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. Prerequisite: Computer Science 280. Not offered 2002-03. *J. Adams.*

300 Special Topics in Computer Science: Computer Graphics (3). S, alternate years. An introduction to interactive 2D and 3D computer graphics techniques, such as transformations, lighting, shading, and hidden surface removal; and photorealistic rendering, including ray tracing and image processing. Programming projects with graphics libraries, such as OpenGL. Prerequisite: Computer Science 230 and Mathematics 255 or permission of the instructor. Not offered 2002-03. *H. Plantinga.*

305 Artificial Intelligence (3). S, alternate years. An introduction to artificial intelligence. Topics include problem solving, knowledge representation, planning, machine learning, natural language-processing, and robotics. Students will be introduced to programming techniques from AI, such as heuristic search, expert systems, and neural networks, as well as to AI's philosophical,

psychological, and religious context. Prerequisites: Computer Science 186 or 280 and permission of the instructor. Not offered 2002-03. *K. Vander Linden.*

320 Computer Architecture (3). F. A study of the basic principles and issues of computer organization and architecture, including the Von Neumann (SISD) architecture, and the MISD, SIMD, and MIMD architectures. Design issues will be studied, including performance evaluation, CISC vs. RISC, pipelining, scalar vs. vector processors, and uniprocessors vs. multiprocessors vs. multicomputers. Additional topics include bus structures, hardware control and microprogramming, memory hierarchies, and operating system interface issues. Prerequisite: Computer Science 270. *D. Lavarell.*

330 Database Management Systems (3). * F. An introduction to the structures necessary to implement a database management system. Topics include data models (including hierarchical, network, and relational data models), normal forms for data relations, data description languages, query facilities. An introduction to existing data base management systems is given. Laboratory. Prerequisite: Computer Science 230. *K. Vander Linden.*

350 Numerical Analysis (4). Analysis of errors in numerical methods, real roots of equations, approximations using polynomials, numerical integration, applications to differential equations, Lagrange and spline interpolation, least squares approximations, orthogonal polynomials, and applications. Also listed as Mathematics 335. Prerequisites: Computer Science 150, 155, or 185 and Mathematics 255, or permission of the instructor. *E. Fife.*

360 Theory of Computation (4). S, alternate years. Topics from the theory of computation including finite state concepts, formal languages and grammars, computability, and computational complexity. Prerequisite: Computer Science 260. *R. Pruijn.*

370 Computer Networks (3). F. This course introduces the student to the field of computer networking. Students will develop an understanding of the general principles of computer communication as they are worked

out in an appropriate protocol suite. Specific attention will be paid to principles of architecture, layering, multiplexing, addressing and address mapping, routing, and naming. Problems considered include the writing of network software, the physical construction of networks, the Internet and its future development, and network security. Prerequisite: Computer Science 270. *D. Lavarell.*

380 Senior Internship in Computing (3). F and S. Interns will work 10-20 hours per week in a local business or non-profit organization under the supervision of a computing professional. The internship experience will give students the opportunity to apply skills and concepts acquired in the classroom to a real-world setting and to participate in the design and/or implementation of a significant computing application. The intern will be expected to maintain a reflective journal and complete a summary paper. Prerequisite: Computer Science 247 or 260. *S. Leetsma.*

385 Senior Project in Computing (2). F and S. This is the first course of a two-semester sequence, in which the student will complete a departmentally approved computing project. This capstone experience will give students the opportunity to apply concepts and techniques learned in the classroom by

developing a significant computing application. The first semester will typically focus on any necessary library research, design, and prototyping; implementation and writing should normally be done in the second semester. The student will submit regular progress reports to a supervising faculty member and submit a preliminary report on the project's status for evaluation by a departmental committee. Prerequisite: Computer Science 247, 260, or permission of the instructor. *Staff.*

386 Senior Project in Computing II (2). F and S. A continuation of Computer Science 385. The student will submit regular progress reports to a supervising faculty member and submit a final report on the project for evaluation by a departmental committee. Prerequisite: Computer Science 385. *Staff.*

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

392 Perspectives on Computing (2). S. A senior-level seminar course. Discussion of special topics in computer science. Special emphasis on computer applications, social implications, ethical and legal issues, and future social impact. Prerequisite: Senior status in a computer science program of concentration. *Staff.*

Dutch

Professor B. Carvill(chair)
Assistant Professor H. De Vries

Programs for students wishing to minor or major in Dutch are worked out for them individually by the department advisor.

DUTCH MAJOR

- Dutch 101
- Dutch 102
- Dutch 201
- Dutch 202
- Six 300-level electives, one of which an approved Dutch-language interim in the Netherlands may be substituted (34 semester hours)

DUTCH MINOR

- Dutch 101
- Dutch 102
- Dutch 201
- Dutch 202
- Two 300-level electives, one of which an approved Dutch-language interim in the Netherlands may be substituted (22 semester hours)

NETHERLANDIC STUDIES MAJOR

Dutch 101

Dutch 102

Dutch 201

Dutch 202

Three 300-level Dutch literature/culture courses, one of which an approved Dutch-language interim in the Netherlands may be substituted

Two courses from Art History 234 or approved interims in history, religion, Frisian, or Afrikaans

An approved interim

Prerequisite to a concentration in Dutch is a minimum average of "C" (2.0) in Dutch 101, Dutch 102, Dutch 201, and Dutch 202. Completion of Dutch 202 meets the foreign language requirement.

COURSES

101 Elementary Dutch (4). F. An introduction to the Dutch language. Students learn the basics of speaking and comprehending everyday Dutch. They also learn the grammatical and structural elements of Dutch essential for reading and writing in the language. Students are also introduced to aspects of Dutch culture and to the fundamentals of functioning linguistically within Dutch society. *H. De Vries.*

102 Elementary Dutch (4). S. This course continues the introduction to speaking, listening, reading, and writing Dutch begun in Dutch 101. It aims to develop sound basic skills and learning strategies in these areas and in related matters such as vocabulary acqui-

sition, communicative interaction, and grasp of grammatical patterns. *H. De Vries.*

201 Intermediate Dutch (4). F. Further development of skills in speaking, listening, reading, and writing Dutch. Includes systematic grammar review and the introduction to finer points of grammar and idiomatic use of the language. Introduction to reading a variety of short literary texts. Prerequisite: Dutch 102 or permission of the instructor. *H. De Vries.*

202 Intermediate Dutch (4). S. A continuation of Dutch 201. Further development of skills in speaking, listening, reading, and writing Dutch. Ongoing mastery of grammar and idiomatic use of the language. Readings of a variety of short literary texts. *H. De Vries.*

305 Dutch Classics (3). F. 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. This course is conducted in Dutch. *Staff.*

306 Dutch Classics (3). S. A continuation of Dutch 305. *Staff.*

309 Netherlandic Civilization (3). S. A study conducted in the English language of several important aspects of Netherlandic civilization: Literature, history, religion, art, architecture, social structure, and education. Not offered 2002-03.

390 Independent Study. *Staff.*

Economics and Business

Professors D. Cook, T. Etter R. Hoksbergen (chair), G. Monsma, **K. Schaefer, R. Slager, J. Tiemstra, S. Vander Linde, *E. Van Der Heide, S. Vander Veen

Associate Professors A. Abadeer, R. Medema, A. Mpesha

Assistant Professors D. Attebury, R. DeVries, K. Schutte, C. Moody, M. Sampson, J. Voskuil

The department has structured its major areas of study so that students may design programs to best prepare themselves for their chosen career fields. It offers five majors leading to a Bachelor of Arts degree — business, economics, a group concentration in the social sciences, a group concentration in business and communication, and a group concentration involving mathematics and economics or business, as well as programs leading to a Bachelor of Science in Accountancy or a Bachelor of Science in Public Accountancy. Group concentrations must form a coherent, planned program approved by an advisor. In the selection of electives, only one interim course may serve as part of any major or minor in the department, and only if the interim course has a prerequisite from the department. The department offers a variety of experiential learning options that can be integrated into any of the department's majors. The department also offers minors in business and in economics, and a teacher education minor in economics. In addition, the department co-sponsors an interdisciplinary minor on third world development (page 242).

BUSINESS MAJOR

Business 160
Business 203
Business 204
Business 370
Business 380
Economics 221
Economics 222
One from Economics 323-326
One from Economics 323-343
Two department electives

Cognates

Mathematics 143, 243, or 343
Mathematics 132 or 161
Computer Science 130
One from Computer Science 105-186

BUSINESS MINOR

Business 160
Business 203
Economics 221
Economics 222
Two Business electives

ECONOMICS MAJOR

Economics 221
Economics 222
Economics 323 or 325
Economics 324 or 326
Economics 395
Three from Economics 331-343
Two department electives

Cognates

Mathematics 143, 243, or 343
Mathematics 132 or 161
Computer Science 130
One from Computer Science 105-186

ECONOMICS MINOR

Economics 221
Economics 222
One from Economics 323-326
Three from Business 203, Economics 323-343

ACCOUNTING MAJOR

Business 160
Business 203
Business 204
Business 215
Business 301
Business 302
Business 305
Three from Business 306, 310, 311, or 315
Business 350
Business 370
Business 380
Economics 221
Economics 222
One from Economics 323-326
One from Economics 323-326, 331-339

Cognates

Mathematics 132 or 161
Mathematics 143 or 243
Computer Science 130
One from Computer Science 105-186

BUSINESS/MATHEMATICS GROUP MAJOR

Business 203
Business 204
Economics 221
Economics 222
Two department electives
Mathematics 161
Mathematics 162
Mathematics 255
Mathematics 261
Mathematics 343
Mathematics 344

Cognates

Computer Science 130
Computer Science 105-186

MATHEMATICS/ECONOMICS GROUP MAJOR

Economics 221
Economics 222
One from Economics 323/325
One from Economics 324/326
Two department electives
Mathematics 161
Mathematics 162
Mathematics 255
Mathematics 261
Mathematics 343
Mathematics 344

Cognates

Computer Science 130
One from Computer Science 105-186

BUSINESS/CAS GROUP MAJOR

CAS 140
CAS 352
One from CAS 101 or 240
Two from CAS 253, 260, 285, 305, 354, and
399
One from CAS 200, 248, or English 262
Business 160
Business 203
Business 380
Economics 221
Economics 222
One from Business 365, 381, or 382
One 300 level Economics or Business elec-
tive

Cognates

Mathematics 143, 243, or 343
Computer Science 130
Computer Science 105-186

SOCIAL SCIENCE GROUP MAJOR- BUSINESS EMPHASIS

Business 160
Business 203
Business 380
Economics 221
Economics 222
One from Economics 323-343 or an ap-
proved interim
Four courses from one of the social sciences
(sociology, psychology, political science,
or history)
Two department electives

Cognates

Mathematics 143, 243, or 343
Computer Science 130
One from Computer Science 105-186

SOCIAL SCIENCE GROUP MAJOR- ECONOMICS EMPHASIS

Economics 221
Economics 222
One from Economics 323-326
Two from Economics 323-343
Two department electives
Four courses from one of the social sciences
(sociology, psychology, political science,
or history)

Cognates

Mathematics 143, 243, or 343
Computer Science 130
One from Computer Science 105-186

SECONDARY EDUCATION ECONOMICS MINOR

Economics 221
Economics 222
Thirteen hours of courses from Business
203 and Economics 323-345, including
one advisor-approved interim

ELEMENTARY SOCIAL STUDIES GROUP MAJOR

Students must take two specified courses
from each of the following four disciplines:
Economics, Geography, History, and Politi-
cal Science. (Specific course choices are listed
in the *Teacher Education Program Guidebook*).
In addition, students must complete a se-
quence of courses from one of these disci-
plines chosen in consultation with a social
studies education advisor. Advisors: D. Miller
and D. Howard, History Department.

ELEMENTARY AND SECONDARY SOCIAL STUDIES GROUP MINOR

- Economics 221
- Economics 222
- Geography 110
- One from Geography 210, 230, 310, or 320
- History 151 or 152
- History 229
- Political Science 101
- Political Science 202

BACHELOR OF SCIENCE IN ACCOUNTANCY (B.S.A.)

The Bachelor of Science in Accountancy degree is intended for students who want to prepare for a career in accounting in the context of a Christian liberal arts education. The program requires 55 semester hours in the Department of Economics and Business and a modified core.

This program is designed for students who are interested in a career in accounting other than public accounting (CPA). Those students interested in public accounting should refer to the next section

of the catalog (Bachelor of Science in Public Accountancy). Students who enroll in this four-year program find positions in banking, industry as well as not-for-profit institutions.

Students qualifying in accounting with this degree and desiring to include an internship (experiential learning) should work out this program with a faculty advisor.

In addition to the specified courses from the Department of Economics and Business, the student must complete a modified core. All core categories must be met by this degree with the exception of a foreign language and one of the courses in Religion.

A model program for the Bachelor of Science in Accountancy is:

| | |
|-----------------------|--------------------|
| <i>First year</i> | |
| <i>Semester Hours</i> | |
| | English 101 |
| | 3 |
| | History 151 or 152 |
| | 4 |

| | |
|--|---|
| Mathematics 143-132 (or alternative mathematics cognate) | 8 |
| Philosophy 153 | 3 |
| Computer science | 2 |
| Religion (either Religion 121 or 131) | 3 |
| Business 160 | 3 |
| Interim (IDIS W50) | 3 |
| Prelude (IDIS 149) | 1 |
| Research and Information Technology (IDIS 110) | 1 |

Second year

| | |
|---|---|
| Business 203, 204, and 215 | 9 |
| Economics 221 and 222 | 7 |
| Persons in Community (Philosophy 221, Political Science 110 or Psychology 151) | 3 |
| Physical world | 4 |
| Literature | 3 |
| Rhetoric in Culture | 3 |
| Interim elective | 3 |
| Health and Fitness | 1 |

Third year

| | |
|--------------------------------------|----|
| Business 301, 302, 305, 315, and 370 | 19 |
| Global and Historical studies | 3 |
| Economics 323 or 324 or 325 or 326 | 4 |
| Living World | 4 |
| Interim elective | 3 |
| Health and Fitness | 1 |

Fourth year

| | |
|--|----|
| Business 306, 310, 311, 350, and 380 | 18 |
| Economics 331-339 (or a second course from Economics 323-326) | 3 |
| The Arts | 3 |
| Cross cultural engagement | 1 |
| Integrative studies | 3 |
| Health and fitness | 1 |

(Assumes that student takes all four from Business 306, 310, 311, and 315)

BACHELOR OF SCIENCE IN PUBLIC ACCOUNTANCY (BSPA) PROGRAM

The BSPA (a five year program) is designed to meet the 150 hours education requirement adopted by Michigan and most other states for CPAs. It includes the course work listed above for the B.S. in Accountancy plus two additional accounting courses and the liberal arts core (with a two course reduction in the foreign language requirement).

A model program for BSPA is:

| <i>First year</i> | <i>Semester Hours</i> |
|---|-----------------------|
| English 101 | 3 |
| Mathematics 143-132 (or alternative mathematics cognate) | 8 |
| Foreign Language | 8 |
| Computer science | 2 |
| History 151 or 152 | 4 |
| Business 160 | 3 |
| Interim (Interdisciplinary W50) | 3 |
| Prelude (Interdisciplinary 149) | 1 |
| Research and Information Technology (Interdisciplinary 110) | 1 |
| <i>Second year</i> | |
| Business 203, 204, and 215 | 9 |
| Economics 221 and 222 | 7 |
| Persons in Community (Philosophy 221, Political Science 110 or Psychology 151) | 3 |
| Biblical Foundations | 3 |
| Interim elective | 3 |
| Philosophy 153 | 3 |
| Literature | 3 |
| Health and Fitness | 1 |
| <i>Third year</i> | |
| Business 301, 302, 305, and 315 | 16 |
| Global and Historical studies | 3 |
| Economics 323 or 324 or 325 or 326 | 4 |
| Living World | 4 |
| Interim (English 262) | 3 |
| Electives | 3 |
| Health and Fitness | 1 |

| | |
|---|----|
| <i>Fourth year</i> | |
| Business 306, 380, and 370 | 10 |
| Economics 331-339 (or a second course from 323-326) | 3 |
| The Arts | 3 |
| Cross cultural engagement | 1 |
| Integrative studies | 3 |
| Health and Fitness | 1 |
| Electives | 9 |
| <i>Fifth year</i> | |
| Business 310, 311, and 350 | 11 |
| Business 307 | 3 |
| Rhetoric in Culture | 3 |
| Natural World | 4 |
| Theological Foundations | 3 |
| Electives | 6 |

Prerequisite for admission to the Bachelor of Science in Accountancy and Bachelor of Science in Public Accountancy major is a minimum grade of “C” (2.0) in both Business 203 and Business 204. Prerequisite for admission to all other major concentrations is a minimum grade of “C” (2.0) in Economics 221. The core requirement for “Social Structures in North America” is met by Economics 151 or Economics 241 or, for students majoring or minoring in economics or business, Economics 221.

COURSES

Business

160 Introduction to Business and Organization Management (3). F and S. An introduction to the functional areas of business and other organizations from a manager’s perspective. The course analyzes and evaluates how managers integrate different facets of business such as law, finances, accounting, information systems, ethics and social responsibility, marketing, and human resources into a successful business or non-profit organization. General management styles and strategies, and aspects of organizational change are also covered. Christian evaluation of management topics is a constant theme throughout the course. *C. Moody, T. Etter, A. Mpesha.*

203 Introduction to Managerial Accounting (4). F. After a brief introduction to the principles of financial accounting and the purpose of financial statements, the course provides an introduction to managerial accounting concepts, budgeting, incremental cost and profit analysis, breakeven analysis, responsibility reporting, and the use of financial analysis for managerial decision-making. Not open to first-year students. *D. Attebury, R. Medema, R. Slager, J. Voskuil.*

204 Financial Accounting (3). S. A continuation of the study of accounting. After considering the importance of generally accepted accounting principles and the study of the accounting cycle, the course emphasizes asset valuation, classification, and measurement of liabilities, and income determination. Prerequisite: Business 203. *D. Attebury, J. Voskuil, D. Cook.*

215 Accounting Process and Methods (2). S. A study and application of accounting processes and techniques. The operations of accounting are explored in depth enabling the accounting major to apply generally accepted accounting principles to the transactions of the accounting cycle. The course will include significant exposure to computerized accounting applications and will parallel the topics covered in Business 204. Prerequisites: Business 203 and at least concurrent enrollment in Business 204. *R. Slager.*

269 International Business (3). F. A study of the global business environment, management challenges, and cross-cultural issues involved in international business and organization management with an emphasis on developing regional expertise and Christian perspective. Prerequisite: Business 160 or permission of the instructor. *A. Mpesha.*

301 Intermediate Accounting (4). * F A study of financial accounting theory and generally accepted accounting principles as applied to the measurement and valuation of assets and liabilities. Prerequisites: Business 204 and 215. *J. Voskuil.*

302 Intermediate Accounting II (4). * S. Continuation of Business 301. 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. Prerequisite: Business 301. *J. Voskuil.*

305 Cost Accounting (4). * 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. Prerequisites: Business 204 and Computer Science 130. *D. Attebury.*

306 Income Tax (4). * F 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: Business 203. *D. Cook.*

307 Advanced Taxation (3). * S. A study of Federal tax law and of tax cases as they apply to corporations, partnerships, estates, and trusts. This course will analyze and evaluate the Internal Revenue Code, the IRS Regulations, and appropriate case law as the basis for understanding the law, for utilizing the law in tax planning, and for ethically interpreting the law. Tax research will be emphasized. Prerequisite: Business 306. *D. Cook.*

310 Advanced Accounting (4). * F Preparation of consolidated financial statements, accounting for partnerships, and accounting for installment and consignment sales. Introduction to governmental and fund accounting. Prerequisites: Business 301 and Computer Science 130. *R. Slager.*

311 Auditing (4). * S. The theory and philosophy of auditing, including an examination of the ethical and other professional stan-

dards required of the Certified Public Accountant. Prerequisite: Completion of or concurrent registration in Business 301. *D. Attebury.*

315 Accounting Systems (4). * S. A study of accounting systems, which provides information for decision-making. The course examines business structures, information needed for decision-making, internal controls in manual and computerized systems, systems development, systems controls, and ethical aspects of the computer environment. Computerized accounting applications are incorporated using accounting software and spreadsheets. Prerequisites: Business 204 and Computer Science 130. *R. Slager.*

350 Law in Business (3). * 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. *D. Buter, T. Waalkes.*

351 Organizational Behavior (3). F and S. A consideration of psychological concepts and research related to human action in work situations, particularly organizations. The course includes discussions of the psychological processes of individuals involved in work and management (e.g., perceptual discrimination in varying tasks, strategies in problem solving, motivation for power and achievement, and effects of compensation on learning), and the social psychology of the work organization (communication patterns, decision-making processes, performance evaluation, conflict, and stress). The relationship of psychological theory and practice are analyzed through case studies of organizational experiences. Also listed as Psychology 301. Prerequisite: Psychology 151 or permission of the instructor. *C. Moody.*

357 Business Aspects for Engineers (2). F. An overview of the aspects of business important to engineering. Selected topics from economics, accounting, finance, marketing, management, and business law are included. Prerequisites: Economics 151 and junior or senior standing in the engineering program. *R. Medema.*

359 Internship in Business (4). F and S. These internships involve ten to fifteen hours of work a week under an employer-supervisor and a series of internship seminars on campus. Placements may be in businesses or in not-for-profit organizations. Each intern keeps an analytical journal, submits papers that focus on business aspects of their internship, completes a personal mission statement, and participates in seminar classes. Students may take Business 359 two times, but only one will fulfill an elective requirement in a department major. Prerequisites: Three courses in business or economics, junior or senior standing, and permission of the internship coordinator. *K. Schutte, C. Moody.*

360 Perspectives on Management (3). F and S. This course attempts to help students develop an integrated understanding of management based on God's revelation in creation and His Word. It develops this understanding through critical engagement with management perspectives of scholars and practitioners writing from both secular and Christian foundations. Prerequisites: Business 160 and Economics 151 or 221. Not open to first-year or sophomore students. *S. Vander Veen.*

361 Health Care Administration and Economics (3). *. The course develops an economic framework for understanding health care institutions and emphasizes the response of health care administrators and business professionals to current health system changes and challenges. Discussion issues include health care reimbursement and finance, health provider management and marketing strategies, business strategies for managing healthcare costs, and health care policy. Prerequisites: Economics 221 and Business 160/260 or permission of the instructor. Not offered 2002-03.

363 Production and Operations Management (3). * S. A study of the management of production and operations within a business, including planning, control, and evaluation of resources, inventory, schedules, and product or service quality. Techniques for making location decisions, implementing just-in-time purchasing and production, scheduling production, and using statistical process control (SPC) are studied. Computer applications are occasionally integrated for analysis and simu-

lation purposes. Prerequisites: Business 160/260 and Mathematics 143 or its equivalent and junior level status. Not offered 2002-03.

365 Human Resource Management (3). * F and 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 development, and collective bargaining. Prerequisites: Business 160/260 or permission of the instructor and junior level status. *C. Moody, T. Etter.*

367 Small Business Management (3). *. A study of the business management principles applicable to the challenges and opportunities unique to small businesses. The course emphasizes strategic analysis of management, marketing, and financial issues facing small firms from an entrepreneurial perspective. This course includes experiential learning under the auspices of Calvin's Small Business Institute. Prerequisite: Senior departmental status. Not offered 2002-03.

Calvin College's Small Business Institute (SBI) was founded by Professor Jack Brothers in the mid-1980's. Today, SBI students consult with local businesses (including not-for-profits) in the areas of small business planning, marketing communications, and consumer behavior. Clients have included schools, neighborhood associations, bookstores, bikeshops, mechanical contractors, printers, photo shops, social agencies, business associations, media companies, etc. Projects have involved observing shoppers in a retail environment, surveying customers in-store and through the mail, implementing and interpreting focus groups and in-depth interviews, and writing marketing communications plans, marketing plans, and business plans.

370 Financial Principles (3). * 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. Prerequisites: Business 204 and Economics 221. *D. Cook, R. Medema.*

371 Financial Instruments and Markets (3). * S. An extension of Business 370 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: Business 370. *R. Medema.*

380 **Marketing** (3). * F and S. A study of marketing planning including the conception, pricing, promotion, and distribution of ideas, goods, services, experiences, and values that attempts to satisfy individual and organizational needs and objectives. Prerequisite: Economics 221. *A. De Vries, T. Etter.*

381 **Marketing II** (3). * S. A study of marketing research and marketing strategy (primarily integrated marketing communications) that builds on knowledge gained in Business 380. This course includes experiential learning under the auspices of Calvin's Small Business Institute (see Business 367). Prerequisites: Mathematics 143 and Business 380. *S. Vander Veen.*

382 **Consumer Behavior Theory and Practice** (3). * F An in-depth look at the processes involved when consumers purchase and use products, explanations for purchase and use, and implications for marketing research and marketing strategy. This course includes experiential learning under the auspices of Calvin's Small Business Institute (see Business 367). Prerequisites: Business 380, Mathematics 143, or equivalent. *S. Vander Veen.*

390 **Independent Study**. F, I, and S. Prerequisite: Permission of the department chair.

396 **Strategic Management** (3). * S. An integrative study of strategic management, requiring contemporary, comprehensive case applications of concepts from economics, marketing, accounting, finance, management, and international business. Ethical aspects of strategic decision making are emphasized. Student teams study cases and present their analyses. This course is recommended for students wishing to understand the formulation and implementation of ethical strategies in diversified businesses. Prerequisites: Business 160, 370, and 380; Economics 222 or permission of the instructor. *A. Mpesha.*

590 **Independent Study**. F, I, and S. Prerequisite: Permission of the department chair. *Staff.*

Economics

151 **Principles of Economics** (3). F and S. The institutions of the North American market economy are studied, examining the determinants of resource allocation, income distribution, prices, production, income and employment levels, and economic growth. Topics include international economic relations and the role of government in the economy. Christian ideas about justice, freedom, and stewardship are applied to economic questions. Students intending to major or minor in economics or business should not take this course, but should take Economics 221 to satisfy this core requirement. *A. Abadeer, R. DeVries, G. Monsma, M. Sampson, S. Vander Linde.*

221 **Principles of Microeconomics** (4). F and S. This course involves a study of the institutions of mixed-market economies such as those of North America, their role in resource allocation, and the determination of prices, outputs, and income distribution. Topics include the role of the government in the economy and environmental impact of economic activity. Christian views concerning justice, freedom, stewardship, and the nature of human beings and society are applied to economic analysis and issues. *R. DeVries, J. Tiemstra.*

221H **Principles of Microeconomics** (4). The honors section of "Principles of Microeconomics" is similar to the regular sections in content and overall course requirements. However, the honors section will be conducted with greater opportunity for class discussion, will include readings on specific U.S. industries (e.g., automobile, computers, health care, and college sports), and will include student reports on topics in economics. A key focus of the course will be on how one's Christian faith influences economic life. Enrollment in Economics 221H is limited to 20 students. *S. Vander Linde.*

222 **Principles of Macroeconomics** (3). F and S. A continuation of Economics 221. A study and evaluation of the determination of national income, including analysis of consumer spending and saving patterns, business investment, government spending, taxation, monetary policy, unemployment, and inflation.

The course includes an introduction to international trade and finance. Prerequisite: Economics 221. *M. Sampson, S. Vander Linde, E. Van Der Heide.*

241 Health Economics and Health Policy (3). S. An introduction to economics in the context of a study of health economics and health policy, with detailed focus on the U.S. health care system. The intent of the course is to develop an understanding of economic principles that can be used with other criteria to evaluate the historical and future direction of the U.S. health care system. Topics include efficiency and the equity of resource allocation, ethical perspectives of health care access, history and reform of health care policy, the evolution and influence of managed care, and financial planning and budgeting. Students will be challenged to further develop and apply a reformed Christian world-view to these issues. This course is especially recommended for students seeking a professional career in mental health, medicine, nursing, or public policy. Not open to first-year students. *S. Vander Linde.*

323 Intermediate Microeconomics (4). * F An intermediate-level study of the microeconomic theory of a market economy, emphasizing the analysis of the behavior of firms and consumers and an evaluation of the efficiency and equity of the market system of organization of economic activity. Students may not receive credit for both this course and Economics 325. Prerequisites: Economics 221 and Mathematics 132 or 161. *G. Monsma.*

324 Intermediate Macroeconomics (4). * S. An intermediate-level study of macroeconomic theory, including the theory of aggregate demand, the level of employment, the general level of prices, and economic growth. The course provides the tools for monitoring and understanding general economic events. Computer simulations are used to demonstrate macroeconomic dynamics. Students may not receive credit for both this course and Economics 326. Prerequisites: Economics 222 and Mathematics 143, 243, or 343. *S. Vander Linde.*

325 Managerial Economics (4). * S. An intermediate-level study of microeconomic theory emphasizing applications to managerial decision-making in such areas as market and risk analysis, demand forecasting, production and

cost analysis, product pricing, profit planning, and capital budgeting. Goals of firms and the use of economic theory in achieving them are examined and evaluated. Students may not receive credit for both this course and Economics 323. Prerequisites: Economics 221, Mathematics 143, 243, or 343, Mathematics 132 or 161, and Computer Science 130. *R. DeVries.*

326 Business Cycles and Forecasting (4). * F An intermediate-level study of macroeconomic theory emphasizing analysis of general business activity and the implications of changing business conditions for business and public policy. Basic forecasting techniques are explained and the use of forecast information in firm and individual decision-making are evaluated. Computer simulations are used to demonstrate the application of economic theory to business planning. Students may not receive credit for both this course and Economics 324. Prerequisites: Economics 222 and Mathematics 143, 243, or 343. *A. Abadeer.*

330 Urban Regional Economics (3). S. This course initially introduces students to regional economic and location theory and then explores regional issues of metropolitan development as they relate to national economic growth. Basic concepts of the study that will be examined include location determinants, land use, inter-regional economic flows of people and resources, exports, infrastructure, and transport systems. Tools of national and regional forecasting and the concept of social accounting systems will be taught to help analyze and develop appropriate policy by business firms and governments at different levels. The course will illustrate applications of theory and policy by considering, typically, the West Michigan economy. Questions concerning economic health of downtown districts, transportation problems, urban sprawl, the role of lending agencies and realtors, and local governmental cooperation with business will be considered in the course. Prerequisites: Economics 221, 222, Mathematics 143, or their equivalents. *E. Van Der Heide.*

331 Money and Banking (3). * 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: Economics 222. *J. Tiemstra.*

332 Environmental Economics and Public Policy (3). * F alternate years. An introduction to the theory and practice of environmental policy. The course provides a survey of the problems considered by environmental economics and an evaluation of the policies that have been developed—problems related to pollution and other forms of environmental deterioration, to the use of energy and other resources, and to related issues. Prerequisite: Economics 221 or permission of the instructor. Not offered 2002-03.

334 Industrial Markets and Public Control (3). * S. A study and evaluation of business strategies in imperfectly competitive markets, including entry barriers, pricing, product differentiation, vertical integration, and mergers. Examination of relevant public policies, such as antitrust law and utility regulation. Prerequisite: Economics 221. *J. Tiemstra.*

335 Labor Economics (3). * S. A study of labor markets and their relationship to the economy as a whole, including labor-force participation, human-capital formation, wage theory, discrimination, unemployment, income distribution, labor unions, and related public policies. Prerequisite: Economics 221. *G. Monsma.*

337 World Poverty and Economic Development (3). * S. A study of the characteristics of poor nations in many regions of the world, and of factors that cause and influence economic development within countries. After examining conditions within poor nations, students analyze theories of economic growth and economic development. Subsequently, the course investigates differences and similarities in human and capital resource endowments, production, and trade relations. Problems, possibilities, and policies are analyzed in each of these topic areas. Prerequisites: Economics 221 and 222. *A. Abadeer.*

338 International Economics (3). * 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: Economic 222. *R. DeVries.*

339 Public Finance (3). * F. A study of the economic effects of government spending and

taxation on resource allocation and on the distribution of income. Students analyze the economic role of government, and current policy issues and the political process regarding taxation and government spending. Prerequisite: Economics 221. *G. Monsma.*

343 Quantitative Economics and Econometrics (3). * F. An introduction to econometric methods that are frequently used in applied economic research and business practice. Emphasis on creating, interpreting, and critically evaluating empirical results. Topics include the classical linear regression model, functional form, dummy explanatory variables, binary choice models, heteroskedastic and autocorrelated disturbance terms, and an introduction to simultaneous-equation and time-series models. Students learn to write their own programs in a major statistical programming language. Prerequisites: Mathematics 132 and 143 or their equivalents. *K. Schaefer.*

349 Internship in Economics (4). F and S. These internships, which will require the student to use the tools of economic analysis, involve ten to fifteen hours of work a week under an employer supervisor, and a series of internship seminars on campus. Each intern keeps an analytical journal, submits a final summary paper, and participates in a biweekly seminar. Prerequisites: Appropriate courses in economics, completion of the mathematics cognate requirements, junior or senior standing, and permission of the internship coordinator. *K. Schutte.*

390 Independent Study. * F, I, and S. Prerequisite: Permission of the department chair.

395 Economics Seminar (3). * S. This course includes a study of the methodological underpinnings of distinct schools of thought in economics. The course first examines these schools on their own terms, then considers them in the light of reflections by Christian philosophers on social science methodology, and finally evaluates them on the basis of the work and thought of contemporary Christian economists. Prerequisites: Senior economics major status; Biblical Foundations I or Theological Foundations I, Developing a Christian Mind, and Philosophical Foundations. *R. Hoksbergen.*

Education

Professors S. Hasseler (Director of Teacher Education), T. Hoeksema (chair), C. Joldersma, R. Keeley, †M. Kraker, A. Post, R. Sjoerdsma, L. Stegink, S. Timmermans, Y. VanEe

Associate Professors J. Gormas, J. Rooks

Assistant Professors D. Buursma, D. Isom

Adjunct Professors B. Hekman, S. Vryhof

Teacher Education Associate P. Oostenink

Undergraduate Teacher Education Programs

The undergraduate teacher education programs are described in detail in the *Teacher Education Program Guidebook*, which is available in the Education Department Office. In Michigan, teachers are generally certified to teach at the elementary (K-8) or secondary (7-12) level. There are a few specialty areas in which students can be certified to teach in Grades K-12 (e.g., Art, Foreign Languages, Music, Physical Education, and Special Education). All teacher education students are required to complete the liberal arts core and a series of professional courses. In addition, students are required to complete a major and minor or multiple minors in disciplinary specialty areas (e.g., History, Language Arts, Early Childhood Education, etc.). Students who wish to teach at the middle school level are advised to follow the elementary teacher education core requirements, choose two minors that they would like to teach in a middle school setting (e.g., language arts and general science), and take the professional courses that are geared toward middle school students (e.g., a particular section of Education 301/303; Education 327).

Since teacher education students have a complex and comprehensive preparation program, it is important that they get assistance in choosing appropriate courses as early as possible. Students who are interested in teacher education should inform the registrar's office as soon as possible so that they can be assigned to an advisor who is knowledgeable about education program requirements. Since there are some core courses which are designed in particular for education students, programs must be carefully planned. It is especially important for students who are considering endorsements in Special Education, Early Childhood Education, Bilingual Education, or English as a Second Language to work with the advisor in their specialty area early in their program.

Normally, students apply to be admitted into the teacher education program during their sophomore year. Criteria for admission to the teacher education program are described in the *Teacher Education Program Guidebook*. Students must also fulfill particular criteria for admission to directed teaching (the full-time student teaching semester) and for certification. All of these criteria are described in the *Teacher Education Program Guidebook*.

Specialized core requirements are listed in the *Teacher Education Program Guidebook*. Professional course requirements are described in this section. Major and minor requirements are described under the appropriate department. The specialty area majors and minors offered are listed below. Note that most group majors and minors are associated with multiple departments. Detailed descriptions of the professional program and specialty area requirements can also be found in the *Teacher Education Program Guidebook*.

ELEMENTARY, SECONDARY, AND SPECIAL EDUCATION CONCENTRATIONS

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| Bilingual-Spanish | Page | 236 |
| Biology | Page | 63 |
| Chemistry | Page | 71 |
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| Computer Science | Page | 91 |
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|---------------------------------|------|-----|
| English as a Second Language | | |
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| Fine Arts Group | | |
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| Communication Arts and Sciences | Page | 83 |
| French | Page | 137 |
| General Science Studies Group | | |
| Biology | Page | 64 |
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| Geography | Page | 142 |
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| German | Page | 148 |
| Health Education (HPERDS) | Page | 151 |
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| Language Arts Group | | |
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| Music | Page | 179 |
| Physical Education (HPERDS) | Page | 151 |
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| Special Education | | |
| Mental Impairment | Page | 109 |

A comprehensive list of departmental advisors for the specific concentrations can be found in the *Teacher Education Program Guidebook*, which can be obtained from the Education Department.

Post Baccalaureate Non-Degree Program Leading to a Michigan Provisional Teacher Certificate

This program is designed for students who have graduated with a bachelor's degree from an accredited institution without having obtained a teaching certificate. To be eligible for this program, students must have a grade point average of 2.5 or above and two letters of recommendation. Students must complete the required courses in the professional sequence for elementary or secondary certifi-

cation including a semester long directed teaching experience. Certification requirements for specialty area majors and minors (including successful completion of state certification tests) must also be met. Only courses in which a grade of "C-" or higher is earned can be used to meet program requirements. Requests for admission to this program should be addressed to the Coordinator of Certification.

**ELEMENTARY EDUCATION
PROFESSIONAL STUDIES**

Education 191
 Education 192
 Education 216
 Education 301
 Education 303
 Education 304/398
 Education 305
 Education 309
 Education 322
 Education 326/327
 Education 345
 Interdisciplinary 213
 Mathematics 221
 Mathematics 222
 Physical Education 221
 Physical Education 222

**SECONDARY EDUCATION
PROFESSIONAL STUDIES**

Education 191
 Education 192
 Education 216
 Education 301
 Education 303
 Education 304/398
 Education 307
 Education 346
 Departmental 359

**SPECIAL EDUCATION MAJOR
(MENTAL IMPAIRMENTS):**

Advisor: T. Hoeksema

Biology 115
 Psychology 151
 Psychology 201
 Psychology 313
 Education 216
 Education 306
 Education 310
 Education 330
 Education 347

EARLY CHILDHOOD MINOR

Advisor: Y. VanEe

Psychology 204
 Sociology 304
 Education/CAS 311
 Education 336
 Education 337
 Education 339
 Education 344

COURSES

191 **Education and Multiculturalism** (0). F and S. Students are assigned to do at least 15 hours of service learning in a school setting in which the majority of the students are from an ethnic group other than their own. Students must also attend five seminars focusing on celebrating diversity and building unity in schools. This course should be satisfactorily completed by the end of the sophomore year as a condition of education program admission. *Staff.*

192 **Education and Exceptional Children** (0). F and S. Students are assigned to do at least 15 hours of service learning in a school setting in which they are working with students in need of special education services. Students must also attend five seminars focusing on understanding ability diversity and the structure of special education services in schools. This course should be satisfactorily completed by the end of the sophomore year as a condition of education program admission. *Staff.*

216 **Educating Exceptional Children** (3). F and S. An introduction to the characteristics of students with a variety of learning needs. Includes study of recent laws and court decisions, alternative educational programs, current issues, and new directions in serving exceptional children in public and private schools. Throughout, a Christian view of persons will be developed, which recognizes the dignity and value of those who have labeled disabilities. Prerequisite: Education 192. Open to first year students only by permission of the instructor. *S. Timmermans, Staff.*

Students seeking certification must be admitted to the teacher education program and be in good academic standing before beginning any 300-level course in the department.

301 **Psychology of Education** (3). F and S. This is an orientation to the field of educational psychology. The following concepts are studied: The learner as God's image-bearer, the learning process, the kinds of learning, and the learning environment. Included topics are human development, learners in communities, motivation, instructional models, individual differences, cultural diversity, assessment, and technology. Prerequisite: Admission to the teacher education program. *Staff.*

303 Introduction to Teaching (4). 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 use of classroom technologies. Prerequisite: Concurrent registration in Education 301. *Staff*.

304 Philosophy of Education (3). F and S. An analysis of the history, assumptions, aims, and practices of four major philosophies that influenced education — idealism, realism, pragmatism, and existentialism — followed by a survey of 20th century movements in educational theorizing. These are compared and contrasted with explicitly Christian approaches to the theory and practice of education. Readings include typical writers from all perspectives, assessed in the light of a Biblical perspective of persons, society, and the human calling in the world. Students will work out a Christian approach to the theory and practice of education. Prerequisites: Education 301/303 and Philosophy 153 or permission of the instructor. *C. Joldersma*.

305 Teaching Social Studies in the Elementary and Middle School (2). F and S. A study of perspectives, content, methods, and materials in teaching the social studies in the elementary school. Students will analyze perspectives and determine major goals and themes for the teaching of social studies. They will study and analyze the contributions of the various disciplines to the social studies curriculum. Students will examine materials and learn and practice methods for teaching the social studies. Biblical principles, which offer direction for human interactions in society, will be considered. Prerequisites: Education 301/303 or permission of the instructor. *Staff*.

306 Mental Retardation (3). * F A comprehensive study of the characteristics of persons who have an intellectual disability. Historical and contemporary perspectives on mental retardation will be explored, as will common causes, definitional issues, and interventions. While special attention is given to the needs of persons with retardation as learners, the course examines the entire lifespan and functioning in a variety of settings besides the school, such as the church, workplace, and neighborhood. A Christian view of persons, community, and discipleship, along with the concept of normalization/social role valoriza-

tion, are integrating elements in the course. Prerequisite: Education 216 or permission of the instructor. *T. Hoeksema*.

307 Reading in Content Areas: Secondary (3). * F and S. A study of the reading process as it relates to the secondary school curriculum; an analysis of the factors which enhance or impede comprehension of content area reading materials; a presentation of reading and study skills common to all content areas; an analysis of reading and study skills required in specific content areas; a review of formal and informal tests of pupil reading levels; and an introduction to interpretation of test scores for screening and determining pupil reading needs. A study of the types and functions of reading programs in secondary schools; a presentation of the responsibilities and qualifications of secondary teachers for applying principles of reading in daily assignments; and demonstration of techniques for meeting the wide range of reading levels found in the average secondary classroom. Prerequisites: Education 301/303 or permission of the instructor. *Staff*.

309 Teaching Religion Studies in the Elementary School (2). F and S. A study of perspectives, content, methods, and materials in teaching religion studies in the elementary school. This includes pedagogy appropriate for public and non-public schools and evaluation of methods and materials. Prerequisites: Education 301/303 or permission of the instructor. *R. Keeley*.

310 Diagnosis and Prescription: Mental Impairment (3). * S. A study of the foundational concepts and basic terminology needed to assess students with intellectual disability. Skill will be developed in selecting, administering, and interpreting both formal and in-formal, norm-referenced as well as criterion referenced and curriculum-based assessment instruments, for the purpose of developing individualized educational plans. Prerequisite: Concurrent enrollment in Education 347. *T. Hoeksema*.

311 Child Language Development (3). * F An examination of early language development research in phonology, morphology, syntax, semantics, and pragmatics. Theories of language acquisition and implications for practice are examined. Particular attention is given to the role of adults in language development and to the relationship between lan-

guage development and cognitive development. Also listed as Communication Arts and Sciences 311. Prerequisites: An introductory course in Psychology, Education, or permission of the instructor.

322 Introduction to Methods of Teaching Reading: Elementary (3). * F and S. A study of the nature of the reading process; an introduction to the various processes; an introduction to the various approaches to the teaching of reading with an emphasis on the basal approach; a presentation of instructional strategies appropriate to a developmental reading program; and an analysis of the organization and management of a classroom reading program. Prerequisites: Education 301/303 or permission of the instructor. *A. Post, J. Rooks.*

326 Reading/Language Arts in the Elementary School (3). * F and S. This course will present reading as a language art and demonstrate the relationship of language arts to the various subjects in the elementary school. Students will learn strategies and techniques for assessing and differentiating instruction to meet the wide range of reading and writing levels found in elementary classrooms. Prerequisite: Education 322 or permission of the instructor. *A. Post.*

327 Reading/Language Arts in the Middle School (3). * F and S. This course will present reading as a language art and demonstrate the relationship of language arts to the various subjects in the middle school. Students will learn strategies and techniques for assessing and differentiating instruction to meet a wide range of reading and writing levels found in middle school classrooms. Prerequisite: Education 322 or permission of the instructor. *J. Rooks, Staff.*

330 Curriculum and Instruction: Mental Impairment (3). * F. A study of the various curricula, instructional materials, and teaching methods appropriate for learners who have mental impairments. Research-based general principles of instruction are reviewed as well as specific methods for teaching domestic, vocational, community living, recreation/leisure, and functional academic skills. Strategies are learned for generating curriculum, evaluating published curricula, and for developing individualized education programs. Includes a

practicum of two half-days per week in local school programs serving students with retardation. Prerequisites: Education 216, 301/303, and 306. *T. Hoeksema.*

336 The Young Child in an Educational Setting (3). * F. A review and critique of the basic theories of child development. Observation and intensive analysis of the development of a particular child in a preschool setting as related to the major theories and to the appropriate facilitation of development. Prerequisite: Psychology 204. *Y. Van Ee.*

337 Curriculum Theory and Development: Early Childhood Education (3). * S. An evaluation of the major approaches to development of a curriculum for early childhood education (up to age eight), the underlying assumptions of each approach, and the appropriateness of each approach for children. Included is a model for curriculum development and opportunity to implement the model for early education. Prerequisite: One course in education. *Y. Van Ee.*

339 Current Issues in Early Childhood Education (3). * S. An examination of support systems for the young child, including developing relationships; issues and trends in child advocacy public law and policy; administration and organization of early childhood programs; and assessment issues. *Y. Van Ee.*

344 Early Childhood Education: Field Experience (12). * A field experience in two early childhood settings that meet state requirements for the endorsement. Provides for analysis of teaching methods, materials, and classroom organization as they relate to the early childhood setting. Prerequisites: Education 336, 337, 339, and Sociology 304. *Y. Van Ee.*

345 Directed Teaching: Elementary (12). F and S. Students participate in full-time supervised practice teaching. Prerequisites: GPA of 2.5, passing scores on the Michigan Basic Skills Test, and appropriate recommendations from the Education and major/minor departments. See the *Teacher Education Program Guidebook* for specific departmental requirements. *S. Hasseler, Staff.*

346 Directed Teaching: Secondary (12). F and S. Students participate in a full-time supervised practice-teaching experience in their major field. All students, except those major-

ing in history, mathematics, and physical education, should expect to do their student teaching during the second semester. Prerequisites: GPA of 2.5, passing scores on the Michigan Basic Skills Test, appropriate recommendations from the Education and major/minor departments (see the *Teacher Education Program Guidebook* for specific departmental requirements), and concurrent enrollment in a departmental Education 359. *Staff*.

347 Directed Teaching: Mentally Impaired (12). * S. Full-time, supervised student teaching in a school program serving students with mild or moderate levels of mental impairment. A minimum of ten weeks, including at least 360 clock hours of observation and participation, is required. Includes a biweekly seminar, which engages students in critical reflection on their experience in applying theory to practice in the student teaching context. Prerequisites: Good standing in the teacher education program, passing scores on the Michigan Basic Skills Test, and appropriate recommendations. *T. Hoeksema*.

348 Directed Teaching: Elementary - English as a Second Language (12). *. Students must complete a semester-long, student-teaching experience in an ESL setting. During that semester they will meet once a week for a session of Interdisciplinary 301, which will serve as the seminar accompanying their student teaching. Ordinarily, they should do their student teaching in ESL and take Interdisciplinary 301 after they have completed their general elementary student teaching. *Staff*.

349 Directed Teaching: Secondary - English as a Second Language (12). *. Students must complete a semester-long, student-teaching experience. During that semester they will meet once a week for a session of Interdisciplinary 302, which will serve as the seminar accompanying their student teaching. Ordinarily, they should do their student teaching in ESL and take Interdisciplinary 302 after they have student taught in their major and taken an Education 359 course in the appropriate department. *Staff*.

398 Integrative Seminar: Intellectual Foundations of Education (3). In this course students examine education in its context as a life practice. It involves inquiry into and critique of the philosophical assumptions, his-

torical developments, and social settings that shape the beliefs and practices informing schools as social institutions and education as cultural practice. Throughout the course, students are completing their own faith-based philosophy of education. Prerequisites: Junior or senior standing; Education 301/303; Biblical Foundations I or Theological Foundations I, Developing a Christian Mind, and Philosophical Foundations. *C. Joldersma*.

IDIS 205 Societal Structures and Education (3). F and S. An examination of the interaction between education and the other systems and institutions (e.g., political, economic, and cultural) that shape society. This course will examine how education is shaped by and is reshaping these systems and institutions. Particular attention will be given to the impact of race, class, and gender on schooling and society. Community-based research projects will challenge students to examine these issues in real-life contexts as well as introducing them to social science research methodology. Christian norms, such as social justice, will shape this critical analysis of the interaction between education and society. This class is appropriate for all students who are interested in education and society and meets a core requirement in the Societal Structures category. *D. Isom*.

Graduate Teacher Education Programs

Calvin College offers Master of Education (M.Ed.) programs in Curriculum and Instruction and in Learning Disabilities. In addition, post-baccalaureate, non-degree programs are available for obtaining the Michigan Professional Teaching Certificate (18 hours of coursework beyond initial certification) and state endorsements for specialized areas of education.

Master of Education Degree

The Master of Education (M.Ed.) programs serve elementary and secondary teachers and administrators who wish advanced professional training and who need to satisfy the requirements for continuing certification or additional endorsements.

Calvin's M.Ed. is designed especially for teachers who are already provisionally certified and experienced in classroom teaching or administration, and who wish to attend a Christian college where academic

excellence is pursued in the light of Christian commitment. The M.Ed. provides college graduates with an opportunity to integrate an authentic Christian perspective with a broader or deeper range of knowledge and insight into the professional role of the teacher or administrator.

Requirements for admission to the program, transfer of credit, and degree requirements are described in detail in the *Graduate Program Bulletin*, which can be obtained from the Education Department Office. Students who wish to learn more about the Curriculum and Instruction degree should meet with J. Gormas, Curriculum and Instruction Program Coordinator. Students who wish to learn more about the Learning Disabilities Program should meet with D. Buursma, Learning Disabilities Program Coordinator.

Michigan Professional Certificate

The State of Michigan requires a minimum of eighteen (18) semester hours of coursework beyond initial certification and three (3) years of successful teaching experience before a teacher can be recommended for a Professional Teaching Certificate. The 18 Hour Planned Program is intended for those who would like to take additional courses to add a level of teaching certification to their certificate or to take courses to add a subject endorsement to their certificate as well as taking the required hours for the Professional Certificate. Courses taken in this program may be transferable to a master's degree at a later time if they are applicable to a particular concentration.

Courses in the 18 Hour Program must be chosen in consultation with an appropriate departmental advisor at the time the program is initiated. Students who graduated from and were recommended for the provisional certificate by Calvin College must take at least six (6) semester hours of the program at Calvin. All others must take at least nine (9) semester hours at Calvin. Previous coursework, as well as planned selections, must be evaluated by this advisor. Only courses with a grade of "C-" (2.3) or higher will be applied to program requirements. Please note that some endorsements may require more than eighteen (18) semester hours. Also, students adding subject endorsements or el-

ementary certification must pass the State of Michigan Tests for those areas.

Specialized Teacher Endorsements

Endorsement programs serve students who have a bachelor's degree and teaching certificate but desire to obtain state endorsements for specialized areas of education. Calvin has endorsement programs in Early Childhood, English as a Second Language, Learning Disabilities, and Mental Impairments. Contact the Education Department Office for further information.

Graduate Courses

501 **Advanced Educational Psychology** (3). F and SS, odd years. An examination of psychoeducational theories of development from the perspective of selected theorists. Consideration is given to the application of these theories to the educational environment and the implications of these theories with regard to intellectual development. Aspects of faith and moral development are considered. *R. Sjoerdsma*.

510 **Advanced Foundations in Education** (3). This course will investigate various aspects of schooling taking into consideration the following: Historical, political, philosophical, social, cultural, religious, and economic contexts. Students will investigate the purposes of school, noticing trends as well as articulating future visions for schooling based on a Christian perspective. Within these contexts, the course will identify and examine school reform issues as they relate to a complex and rapidly changing local, national, and global society. *J. Gormas*.

512 **Theories of Instruction** (3). S and SS. This course examines the theoretical foundations of instruction as described by selected researchers. It focuses on the underlying assumptions of various theories and interpretation of these theories from a Reformed perspective. Relationships between development and instruction are considered. The implications of diversity in the classroom, the use of technology in contemporary education, and issues of reform in education are discussed. Prerequisites: One course in psychology or sociology of education and one course in history or philosophy of education. *J. Gormas*.

513 Cognition, Learning, and Literacy Development (3). F, odd years, and SS. This course examines underlying concepts associated with the acquisition of reading and writing. Social and cultural factors contributing to literacy development are considered from the perspectives of educational psychology, cognitive psychology, and language development. Current issues related to classroom instruction are addressed in lectures, discussions, and classroom applications. Prerequisites: At least one course in reading and one in psychology. *Staff.*

530 Education of the Gifted (3). 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. Prerequisites: Graduate standing and teaching experience. Not offered 2002-03. *R. Keeley.*

531 Teaching Children with Learning Problems (3). 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. Not offered 2002-03. *Staff.*

534 Introduction to School Leadership (3). A study of leadership theory and practice relating to building school communities that promote learning for all students. This introductory course in school leadership will focus on organizational and leadership theory; establishing a school mission; collaborative problem-solving and community building; decision-making skills and procedures; and personal leadership qualities. Special emphasis will be given to exploring Biblical principles which guide Christian leaders in school settings. A field experience involving observation of current school leaders is included as part of the course requirements. *B. Hekman.*

538 Professional Development and Supervision (3). A study of the theory and practice related to the professional development of

teachers and administrators at both the elementary and secondary levels. This course focuses on ways in which school leaders can structure professional development opportunities that promote student learning and school improvement. The course includes a study of adult learning theory, collaborative learning models, action research, mentoring and coaching, formal and informal teacher assessment, and recruitment, induction, and retention of new teachers. Special emphasis will be given to Biblical principles which help shape professional communities in schools. *B. Hekman.*

540 Trends and Issues in Reading and Literacy Instruction (3). SS, even years. This course is designed to acquaint students with the major theoretical orientations to reading and literacy development from emergent and early reading and writing through conventional, accomplished reading and writing. Students will study the interrelated nature of reading and writing processes and the development of optimal conditions for reading and literacy instruction. Students will develop procedures for evaluating existing reading programs and materials. Classroom case studies will be used to provide experienced teachers with the basis for informed decision-making techniques in order that they will be able to help other classroom teachers become effective practitioners. Prerequisite: Education 307 or 322 or the permission of the instructor. *J. Rooks.*

542 Diagnosis and Remediation of Reading Disabilities (3). SS, odd years. An advanced course for the training of reading personnel or classroom teachers. A cognitive framework for diagnosing and planning instruction for a severely disabled reader is presented. After a review of reading theory, current approaches to teaching reading, and their relationship to reading disability, formal and informal assessment measures will be examined. Following extensive work with a disabled reader, an assessment portfolio, and a case report on the disabled reader will be developed. Prerequisite: Education 513, 540, or permission of the instructor. *A. Post.*

543 Teaching Literacy Through Literature (3). SS, even years. This course investigates literature-based reading as it is used in a variety of ways. It seeks to familiarize teach-

ers, future teachers, administrators, specialized reading personnel, and other interested persons in children's literature and its use in teaching reading. The course examines the relationship between literature-based reading and a language approach to teaching the language arts. Further topics include emergent literacy, word identification, vocabulary, and reading, and comprehension of narrative and expository text as they relate to literature-based reading. The course includes an emphasis on multicultural literature and its use in developing multicultural sensitivity and appreciation. Special needs students, portfolio assessment, and the parent-student-teacher partnership conclude the course. *A. Post.*

548 Practicum: Learning Disabilities (5). S and SS. Students complete a practicum experience at the elementary or secondary level. Knowledge of instructional approaches in grades K-12 must be demonstrated by all students. Students who have not had prior, supervised teaching experience in special education are required to complete a ten-week, full-time supervised teaching experience. Students who are seeking a second endorsement in special education must complete a practicum, with a minimum of 180 hours, in an appropriate setting. A seminar integrating theory and practice is included in this course. Prerequisite: All other courses in the endorsement program. *Staff.*

550 Theories of Learning Disabilities (3). F and SS. This course is designed to acquaint students with major theoretical models of learning disabilities through a series of lecture discussions. Research related to general characteristics, language acquisition, academic, social development, and problem solving performance of the learning disabled is examined. Approaches to the education of the students with learning disabilities based on the theoretical models are also studied. Current issues in the field are discussed. Federal and State special education legislation is examined. Prerequisite: Education 216. *Staff.*

551 Assessment and Diagnosis: Learning Disabilities (4). S and SS-2003. The course is designed to teach the skills necessary to perform comprehensive educational evaluations of the atypical learner and to utilize the diag-

nostic data to construct appropriate instructional recommendations for students with learning disabilities. Supervised clinical experiences are required to demonstrate application of theoretical knowledge. Prerequisites: Education 550 and 582 or permission of the instructor. *D. Buursma.*

571 Assessment and Diagnosis: Emotional Impairment (3). S, even years. This course surveys the various perspectives of child and adolescent psychopathology as they relate to diagnostic approaches. The purpose of this course is to acquaint the teacher with a variety of assessment measures and to have the teacher use diagnostic findings for prescribing interventions appropriate for school-aged children and adolescents. Prerequisite: Education 594 or Psychology 250 or 510. *Staff.*

572 Curriculum, Management, and Instruction: Emotional Impairment (3). F, even years. One focus of this course is the teaching, modeling, and promotion of appropriate behavior/mental health in the classroom. Affective, social-competency, and moral/religious curricula are reviewed. The second focus of this course is the analysis, management, and correction of problem behaviors in the classroom. Techniques reviewed include psychodynamic approaches as well as applied behavioral analysis approaches. The goal, throughout this course, is to present curriculum and instructional methods so that they are applied and evaluated from a Christian perspective. A practicum experience is included in this course. Prerequisite: Education 571 or permission of the instructor. *Staff.*

580 Curriculum Theory and Development (3). F and SS. A study of curriculum development theories and models for pre-school through grade 12. This course includes a study of issues relating to organizing curriculum, selecting effective learning resources, implementing curricular change in a school setting, analyzing curriculum, and materials for scope and sequence, gender issues, multicultural considerations, and integrating faith and learning. Prerequisite: Teaching experience. *J. Gormas.*

582 Curriculum and Instruction: Learning Disabilities (3). F and SS. This course is designed to acquaint students with remedial methods appropriate for students in grades

K-12 with learning disabilities. Attention is given to the role of the teacher/clinician, adapting the learning environment, and selecting appropriate instructional methods for students with learning disabilities. Curriculum and instructional methods related to oral language, reading, writing, mathematics, problem solving, and uses of computer technology are examined. Meeting IEPC goals in classroom instruction is considered. Emphasis is placed on the development of interpersonal skills required in co-teaching structures and in working with professionals in other disciplines, agencies, colleagues, and parents in the school and community. Prerequisite: Education 550. *Staff.*

590 Independent Study (3). F, I, S, and SS. *Staff.*

594 Educational Research and the Classroom (3). F and SS. The purposes of this course are (1) to explore a variety of types and methods of educational research and inquiry from a Christian perspective and (2) to design a master's degree project or action research. Emphasis is placed on identifying and designing research that is practically feasible and provides useful information for the classroom teacher. Students engage in educational inquiry and design educational research in an area appropriate to their subject matter area or grade level interest. Prerequisite: At least two graduate-level courses. *J. Gormas.*

595 Graduate Project (3). F, S, and SS. The prospectus for each Master of Education project must be developed under the supervision of a faculty member and must be approved by the student's graduate advisor.

597 Graduate Seminar: Curriculum and Instruction (3). S. This seminar is designed to

integrate the program components in the M.Ed. Program in Curriculum and Instruction. Developments in the theory and practices in the area of curriculum and instruction as related to the context of education, curriculum theory, instructional theory, and disciplinary concentration are reviewed. By means of broad unifying themes, students will be expected to integrate into a coherent unity what they have learned in the program. The broad range of knowledge in the field of Curriculum and Instruction will be integrated with an authentic Christian perspective. In the process, students will reflect on how their education and professional experiences can be used for personal growth and to influence society. Upon completion of the seminar, a final integrative examination is required. Prerequisites: All other courses in the M.Ed. Program and permission to register for the integrative exam. *J. Gormas.*

598 Graduate Seminar: Learning Disabilities (3). S. This seminar is designed to integrate program components in the M.Ed. Program in Learning Disabilities. Developments in theory, research, and practice in learning disabilities as related to psychology, education, language, and social practice are reviewed. Students submit integrative papers to demonstrate an understanding of principles and current issues in the field of learning disabilities. Emphasis is placed on developing leadership roles in the field of learning disabilities. Guided supervision of individual assessment and educational programming is required. Upon completion of the seminar a final integrative exam is required. Prerequisites: All other courses in the M.Ed. Program and permission to register for the integrative exam. *Staff.*

Engineering

Professors R. Brouwer (chair), R. DeJong, R. Hoeksema, E. Nielsen, S. Vander Leest, L. Van Poolen, W. Wentzheimer, P. Ribeiro

Associate Professor G. Ermer, L. De Rooy

Assistant Professors J. Jewett Van Antwerp, J. Van Antwerp, M. Heun

Adjunct Associate Professor B. Vanden Bosch

Calvin College offers a Bachelor of Science in Engineering degree (B.S.E.) with concentrations in Chemical, Civil, Electrical and Computer, and Mechanical Engineering. The Engineering Accreditation Commission of the Accreditation Board for Engineering and Technology (A.B.E.T.) accredits the B.S.E. program. The recommended first semester curriculum is Chemistry 103, Mathematics 161, Engineering 101, and English 101.

Engineering (B.S.E.)

Engineering is a design-oriented profession applying the principles of mathematics, science, economics, ethics, social sciences, and humanities with judgment to the utilization of energy and materials for the benefit of humanity.

Students at Calvin College prepare to be engineers by following a program leading to a Bachelor of Science in Engineering (B.S.E.) degree. This degree is attained by completing courses in one of four concentrations—chemical engineering, civil engineering, electrical and computer engineering, or mechanical engineering. The Engineering Accreditation Commission of the Accreditation Board for Engineering and Technology (A.B.E.T.) accredits this curriculum. Students interested in engineering should consult with the department chair, R. Brouwer.

The core mission of the Calvin College Engineering Program is to train engineers as designers, to solve problems in society through the responsible use of technology for the glory of God. The educational objectives of the engineering program are that its graduates will be:

- Individuals who are firmly grounded in the basic principles and skills in engineering, mathematics, science, and the humanities, for correct, perceptive, and sensitive problem assessment at a level appropriate for entry level work both in industry and graduate school;
- Designers who are able to creatively bring a project from problem statement to final design and prototype while realizing the interdisciplinary and interdependent character of the engineering profession; and
- Servants whose Christian faith leads them to an engineering career of action and involvement, to personal piety, integrity, and social responsibility.

The engineering program has a strong emphasis on design. Here the student meets the challenging value and technical issues that arise when societal problems are dealt with through technology. The design experience starts with several projects in the first year, which focus on societal problems and issues, and which emphasize conceptual design, creativity, and teamwork. Design experiences are then integrated into each concentration by way of specific courses or projects. Finally, the design experience is completed by means of a capstone design project course sequence during the senior year. Within this design perspective, students are aided in the development of a thorough Christian understanding of technology and its applications.

Each of the four concentrations in the engineering program has two major themes or emphases. The Chemical Engineering concentration has emphases of chemistry and chemical processing. The Civil Engineering concentration has emphases of hydraulics and structures. The Electrical and Computer Engineering concentration has emphases of digital systems and analog circuits. Finally, the Mechanical Engineering concentration has emphases of thermal systems and machine design.

Admission. Students follow a common program for the first two years, at the end of

which they apply for admission to a concentration in the Department of Engineering. The minimum requirements for admission to the program are:

- Completion of Chemistry 103, Mathematics 161, 162, 231, 232, Physics 133 and 235 with a minimum grade of “C-”;
- Completion of Engineering 101, 106, 181, 202, 204, and 209 with a minimum grade of “C-”;
- Completion of 16 hours of the required humanities courses; and
- Have a minimum cumulative grade point average of 2.30.

Students must apply for admission to a concentration in the Department of Engineering during the semester in which they are completing the required courses listed above. After a student is accepted, the chair completes a major counseling form for the student, indicating the remaining requirements. Admission to a B.S.E. concentration allows the student entry into 300-level engineering courses.

Probationary Admission. Probationary admission is available to assist certain students. Students who wish to take 300-level courses, but who have not completed the required courses with the stipulated minimum grade or who have not achieved the minimum required cumulative grade point average may be given probationary admission to the program. Such students may not have more than two course deficiencies nor may their cumulative grade point average be lower than 2.2 and, furthermore, all deficiencies must be removed within a designated period of time, not to exceed one year. Students who fail to meet these conditions are not eligible to reapply for admission to the program at a later date. Students should request probationary admission when applying for admission to the Engineering program. (As an alternative to probationary admission, students may delay taking 300-level courses until they have met all requirements for regular admission to the program).

Graduating with Honors. Those wishing to graduate with honors in Engineering must take at least two honors courses in engineering and must receive credit for either Engineering 294 or 394 (Engineering Seminar) and Engineering 385 (Engineering Internship). Since the Engineering Department does not regularly offer honors sections, the two honors courses are taken by special arrangement with the course instructor. The minimum grade to receive honors credit in engineering courses is an “A-”.

International Concentration Designation. Any student who completes an international interim course, receives credit for an international internship, and demonstrates mastery of the native language of the country of their international internship may receive an international designation to their concentration. For additional details, please contact the department chair or the department internship coordinator.

Transfer Student Admission. Students wishing to transfer from another school should apply to the Office of Admissions. In general, transfer students must meet the same course requirements as students who begin their programs at Calvin. No course completed with a grade below “C” (2.0) will receive transfer credit.

Transfer students must arrange for an analysis of transcripts by the department chair well in advance of course advising. In addition, those who wish to take 300-level courses in their first semester at Calvin must:

1. Have a 2.5 grade point average at their previous school;
2. If requested, provide a letter from that school indicating that the student was in good academic and personal standing; and
3. Receive either probationary admission or regular admission or possibly special permission from the chair.

Calvin’s engineering program emphasizes the integration of Christian faith and a professional engineering education. This integration takes place in many ways. For this reason a student seeking a B.S.E. degree from Calvin should be part of the program for the equivalent of no less than four semesters as a full-time student at Calvin. It is also

stipulated that at least one non-technical course be taken for each semester at Calvin.

Notes Regarding Admission and Graduation. All students must display a high degree of personal integrity to be recommended for admission. After admission to a B.S.E. concentration, the student must continue to make adequate progress toward fulfilling graduation requirements (a grade below “C–” in a 300-level course is an example of inadequate progress; see the chair of the department for further details). In addition to an overall, college-wide grade point average of 2.0, the student must obtain a grade point average of 2.0 in all engineering courses completed at Calvin to be eligible to graduate.

Advisory Council. The Engineering Department is served by an advisory council consisting of engineers from local industries, which meet semi-annually to review the program and give advice from an industrial perspective. Calvin College is an affiliate member of the American Society for Engineering Education (ASEE) and the Junior Engineering Technical Society (JETS), and is an associate member of the Michigan Chemical Council (MCC). Calvin College has student chapters of ASCE, ASME, and IEEE.

BACHELOR OF SCIENCE IN ENGINEERING

Common engineering courses (26 hours)

Engineering 101 - core
Engineering 106
Engineering 181
Engineering 202
Engineering 204
Engineering 209
Engineering 339 - core
Engineering 340 - core

Technical Cognates (32 hours)

Business 357
Chemistry 103
Computer Science 150 or 155 or 153/154
Mathematics 161 - core
Mathematics 162
Mathematics 231
Mathematics 232
Physics 133 - core
Physics 235 - core

Humanities Courses (29 hours)

Interdisciplinary 149 Prelude - core
Interdisciplinary W50 DCM - core
English 101 - core
Health and Fitness - core
History 151 or 152 - core
Philosophy 153 - core
Religion 121 or 131 - core
Economics 151 - core
Literature - core
The Arts - core
Cross-Cultural Engagement - core

Students must meet the requirements of at least one of the four concentrations listed below:

Chemical Engineering Concentration-Chemistry and Chemistry Processing Emphasis (44 hours)

Engineering 303
Engineering 312
Engineering 330
Engineering 331
Engineering 335
Engineering 337
Engineering interim
Engineering 342
Chemistry 261
Chemistry 262
Chemistry 317
Chemistry elective

Civil Engineering Concentration-Hydraulics and Structures Emphasis (42 hours)

Engineering 305
Engineering 318
Engineering 319
Engineering 320
Engineering 321
Engineering 326
Engineering 327
Engineering Interim
Engineering Elective
Basic Science/Advanced Mathematics Elective
Basic Science/Engineering Elective

Electrical and Computer Engineering Concentration-Digital Systems and Analog Circuits Emphasis (42 hours)

Engineering 302
Engineering 304
Engineering 307

Engineering 311
 Engineering 325
 Engineering 332
 Engineering Interim
 Engineering Elective
 Basic Science Elective/Mathematics
 Mathematics Elective/B.S./Engineering
 Computer Science 186

Mechanical Engineering-Thermal Systems and Machine Design Emphasis (42 hours)

Engineering 305
 Engineering 319
 Engineering 322
 Engineering 324
 Engineering 328
 Engineering 333
 Engineering 334
 Engineering 382
 Engineering Interim
 Engineering Elective
 Basic Science Elective/Mathematics
 Mathematics Elective/B.S./Engineering
 Group majors not accredited by A.B.E.T. may be appropriate for some students and are described below.

ENGINEERING AND GEOLOGY GROUP MAJOR

Engineering 101
 Engineering 202
 Engineering 205
 Engineering 305
 Geology 151
 Geology 152
 Geology 201
 Geology 212

Four approved electives (two from engineering or geology and two approved cognates from a third department within the Science Division). At least two of the geology and/or engineering courses must be at the 300-level.

ENGINEERING AND PHYSICS GROUP MAJOR

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 within the Science Division.

COURSES

101 **Introduction to Engineering Design (2).** F An introduction to the design process and engineering computer design tools by means of lectures, computer work, and projects. Readings are assigned in design related areas of creative thinking and modeling. Readings, lectures, and discussions also examine the areas of technology (especially the computer) in society, engineering ethics, engineering liability, and library research methods. The student is introduced to the computer and its application as a resource tool. Computer software tools for engineering design are explored, including email, the world wide web, and spreadsheet software. This course fulfills the Research and Information Technology core category. *Staff.*

103 **Architectural Communication and Concept Design (4).** 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 computer graphics. 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. *Staff.*

106 **Engineering Chemistry and Materials Science (4).** S An introductory course in the science of engineering materials. Engineering properties of materials - mechanical, electrical, and chemical - are closely linked to the underlying solid state and molecular structure. Chemistry relating to various aspects of design including phase change, solution theory, acid-base solutions, and chemical equilibrium is presented. This course is team-taught by chemists and engineers to facilitate the integration of basic chemical principles and engineering design. Issues of stewardship of resources are addressed. Laboratory. Prerequisites: Chemistry 103, Engineering 101, and Mathematics 160 or 161. *Staff.*

181 **Engineering Graphical Communication Lab (2).** F This laboratory course focuses on

techniques and computer software tools used for visualization and engineering communication. The course introduces graphical techniques for spatial analysis, including orthographic projection, free-hand sketching, pictorial representation, descriptive geometry, sections, basic dimensioning, and tolerancing. *Staff.*

202 Statics and Dynamics (4). 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 133 and concurrent registration in Mathematics 231. *Staff.*

204 Circuits Analysis and Electronics (4). An introduction to the theory and application of electronic circuits and devices. The following topics are covered: Basic linear circuits (including frequency and transient response), semiconductor devices (diodes, op-amps, comparators, and timers), electric power, electric safety, and DC machines. Laboratory exercises are used to illustrate the material covered in the lecture portion of the course. Measurements of voltage, current, resistance, power, transient response, resonant circuits, voltage regulators, operational amplifiers, and timer circuits will be made and digital logic circuits will be examined. *Staff.*

209 Introduction to Conservation Laws and Thermodynamics (4). This course introduces several foundational engineering topics. Included are single and multi-component process material and energy balances (conservation laws), the first and second laws of thermodynamics and heat transfer. Study of chemical kinetics and equilibrium demonstrates the link between science and design begun in Engineering 106 and also broadens the student's knowledge of chemistry. Issues of stewardship of materials and resources are addressed. Laboratory. Prerequisites: Engineering 106 and Mathematics 162 or permission of the instructor. *Staff.*

220 Introduction to Computer Architecture (4). F A study of computer organization (including memory hierarchy, I/O, bus-based

systems, distributed systems, and parallel systems), and computer architecture (including CPU control, pipelining, and instruction set architecture). Laboratory exercises emphasize principles. Prerequisites: A programming language course, normally Computer Science 150, 155, or 185 or permission of the instructor. *Staff.*

Prerequisite to all courses numbered 300 or higher is formal admission to a B.S.E. concentration.

302 Engineering Electromagnetics (4). S A study of the laws and engineering applications of electric and magnetic fields in various conductive, dielectric, and magnetic materials and under various boundary conditions. Emphasis is on the analysis and design aspects of transmission line circuits. Prerequisites: Mathematics 231, Mathematics 232, and Physics 235. *Staff.*

303 Chemical Engineering Principles and Thermodynamics (3). This course continues the study of Chemical Engineering Principles begun in Engineering 209. Included are material and energy balances with reaction and introduction to vapor-liquid and liquid-liquid equilibrium including the concepts of dew and bubble points and the flash process. Process simulators (HYSYS) are introduced. Principles are reinforced with an in-depth team case study of a commercial process. Basic concepts of thermodynamics, i.e., equilibrium, reversibility, system are presented. The first and second laws are studied including the Carnot cycle and reversible process equipment as models of best performance. This material provides the foundation for the in-depth study of thermodynamic in Engineering 312. Prerequisites: Engineering 209, Mathematics 231, and concurrent registration in Chemistry 317. *Staff.*

304 Fundamentals of Digital Systems (4). S An introduction to the fundamental principles of logic design in digital systems. Topics include: Boolean algebra, analysis and synthesis of combinational and sequential networks, register transfer language, micro-operational description and applications to computer design, computer organization and assembly language programming, and asynchronous logic. The student is introduced to digital logic families (including TTL and CMOS) and pro-

programmable logic devices, digital logic CAD tools, and hardware description languages. Logic synthesis, including VHDL. Laboratory work will include logic design and assembly language programming. Prerequisites: Engineering 204 and a programming language course (normally Computer Science 155). *R. Brouwer, Staff.*

305 Mechanics of Materials (4). 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 theory of failure, and energy methods. Laboratory experiments are used to emphasize principles. Prerequisite: Engineering 202. *R. Hoeksema, Staff.*

306 Principles of Environmental Engineering (4). S, alternate years. Decision-making in the selection of environmental control measures and equipment. The emphasis is on water supply and wastewater treatment, solid waste management, and hazardous waste disposal. Prerequisite: Junior or senior standing in the Engineering Department or approval of the instructor. *Staff.*

307 Advanced Network Analysis (4). F. Advanced techniques for the analysis of analog electrical networks. Topics include: Sinusoidal steady-state power calculations (including 3-phase), mutual inductance and transformers, s-domain analysis, Laplace transforms, Fourier series, Fourier transforms, and continuous versus discrete signal analysis. Frequency response is analyzed using transfer functions, Bode plots, and spectral plots. Prerequisites: Engineering 204 and Mathematics 231 and 232. *R. Brouwer.*

311 Electronic Devices and Circuits (4). F. A study of the characteristics and qualitative internal action of commonly used micro-electronic devices for discrete and integrated circuits, such as diodes, junction field-effect transistors (JFETs), metal-oxide semi-conductors FETs (MOSFETS), and bipolar junction transistors (BJTs). Application of these devices in basic amplifier circuits is explored. Laboratory exercises are used to illustrate concepts. Prerequisite: Engineering 204. *Staff.*

312 Chemical Engineering Thermodynamics (4). S. Thermodynamic topics important in Chemical Engineering are addressed: The properties of real fluids and equations of state, properties of mixtures, phase equilibrium, and chemical equilibrium. Prerequisites: Engineering 209, Engineering 303, and Chemistry 317. *Staff.*

314 Vibration Analysis (4). 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: Engineering 202 and Mathematics 231. *R. De Jong.*

315 Control Systems (4). F. 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: Engineering 204 and Mathematics 231. *Staff.*

318 Soil Mechanics and Foundation Design (4). S. Soils studied as engineering materials whose behavior is dependent upon soil types, index properties, and soil moisture conditions. The scope of the course includes soil structures, index properties, soil identification, permeability, compressibility and consolidation, soil testing, static and dynamic pressures, effective pressures, and foundation design. Laboratory experiments are used to emphasize principles. Prerequisite: Engineering 305. *R. Hoeksema.*

319 Introduction to the Thermal/Fluid Sciences (4). F. An introduction to the Engineering thermal and fluid sciences including elements of thermodynamics, fluid mechanics, and heat transfer. Concepts include the properties of fluids, first and second laws of thermodynamics, external and internal viscous and ideal flows, and conduction, convection, and radiation heat transfer. Laboratory exercises are used to illustrate concepts. Prerequisites: Engineering 202, Mathematics 231, and permission of the instructor. *Staff.*

320 Hydraulic Engineering (4). S. Application of the basic principles of fluid mechan-

ics to practical problems in hydraulic and hydrologic analysis. Topics include fluid statics, hydrology, groundwater flow, open channel flow, closed conduit flow, and Centrifugal Pumps. Computer techniques and laboratory exercises are used to emphasize principles. Prerequisite: Engineering 319. *R. Hoeksema.*

321 Hydraulic Engineering Design (4). F Application of principles of hydraulics and hydrology to the design of hydraulic systems and structures. Problems considered in this course will include design of pipe networks for water distribution, design of sewage collection systems, design of pumping facilities, design of groundwater remediation systems, design of flood control structures, and design of dams and reservoirs. Computer techniques will be frequently employed. Prerequisite: Engineering 320. *R. Hoeksema.*

322 Machine Design (4). S Application of engineering mechanics, materials, and failure theories to the analysis and design of mechanical elements and systems. Computer techniques are used as aids to analysis and design. Prerequisite: Engineering 305. *L. Van Poolen.*

324 Materials and Processes in Manufacturing (4). S This course introduces students to the various mechanical and management issues involved in the fabrication of manufactured goods. Scientific and engineering principles are applied to fabricating processes such as casting, forming, and machining so as to determine the relation of process to material properties, economics, dimensional accuracy, and energy requirements. Topics such as computer-aided manufacturing (CAM), numerical control (NC), statistical quality control (SQC), and quality management are also explored. Field trips and laboratories are used to support the lecture material. Prerequisites: Engineering 106 and 305. *G. Ermer.*

325 Computer Architecture and Digital Systems Design (4). F Design of advanced digital systems using programmable logic, ASICs, and microprocessors. Microprocessor architecture including pipelining, memory hierarchy, cache, instruction set architecture, CPU control, bus standards, I/O, superscalar, and VLIW approaches. Interfacing and communication techniques, including data error detection and correction codes. Introduction to

parallel processing. Laboratory exercises emphasize the design of microprocessor-based digital systems. Prerequisite: Engineering 304. *Staff.*

326 Structural Analysis (4). S A study of beams, two-dimensional trusses, and rigid frames. Course work includes calculation of shear forces and bending moments due to fixed and moving loads, calculation of deflection, analysis of moving loads using influence lines, and the analysis of statically indeterminate structures. The course also includes an introduction to matrix methods in structural analysis. Prerequisite: Engineering 305. *L. De Rooy.*

327 Structural Design (4). F Application of principles of mechanics of solids and structural analysis to the design of structural members made of steel or reinforced concrete. Allowable stress and ultimate strength design procedures are studied along with the AISC specification for the design, fabrication, and erection of structural steel for buildings and the ACI building code requirements for reinforced concrete. Computer techniques are used as aids to analysis and design. Prerequisite: Engineering 326. *L. De Rooy.*

328 Intermediate Thermal/Fluid Sciences and Design (4). S An intermediate treatment of heat transfer and thermodynamics including analysis and design related to steady and unsteady conduction with an emphasis on two and three dimensions, free and forced convection, radiation modes of heat transfer, power and refrigeration cycles, air conditioning processes, chemical equilibrium, and combustion. Laboratory, design, and computer exercises are utilized to emphasize principles. Prerequisite: Engineering 319. *L. Van Poolen.*

330 Fluid Flow and Heat Transfer (4). S Applications of fluid flow and heat transfer fundamentals to Chemical Engineering problems including heat exchanger design and designs for the transportation and metering of fluids. Unit operations of filtration and evaporation are covered. Prerequisites: Engineering 209 and 303. *J. Van Antwerp.*

331 Kinetics/Reactor Design (4). F An introduction to chemical kinetics and reactor design. Principles of kinetics of homogeneous and heterogeneous reactions with differential

and integral analysis of kinetic data are included. Ideal reactor design concepts, non-isothermal reactor design, and design of catalyzed fluid-solid reactors are presented. Prerequisites: Engineering 312, 330, and Chemistry 317. *W. Wentzheimer.*

332 Analog Circuits and Systems Design (4). S. Feedback principles and electronic circuit theory and device theory applied to multistage transistor amplifiers. Detailed study of operational amplifier specs, nonidealities, and compensation. Introduction to filter theory and practical realizations. Power supply design: Rectifier circuits, linear, and switching regulators. Nonlinear circuits: Comparators, multipliers, Schmitt trigger, S/H circuits, multivibrators, and oscillators. Introduction to noise analysis and low noise design. Emphasis on realization of designs using commercially available ICs. Design experience emphasized in projects and the laboratory. Prerequisites: Engineering 307 and 311. *Staff.*

333 Thermal Systems Design (4). F. Advanced heat transfer, thermodynamic, and fluid flow topics important for the design of thermal systems are presented. Availability (energy) analysis and methods for the optimization of system components are given. Selection and design of fluid flow and heat transfer equipment used in energy conversion systems are emphasized. Economic evaluation is studied. A co-generation system is studied throughout the semester to emphasize basic principles of analysis and design. A project is required. Prerequisite: Engineering 328. *L. Van Poolen.*

334 Dynamics of Machinery (3). S. This course investigates various dynamic aspects of machinery. An in-depth study is made of mechanisms such as the four-bar linkage. Cams and gears are studied in the context of their use in machines. Vibration concerns are addressed including methods of balancing rotating machinery. Kinematics and kinetics are studied in a three-dimensional space with an emphasis on application in the area of robotics. Computer simulation of mechanisms is used to reinforce basic concepts. Prerequisite: Engineering 202. *G. Ermer.*

335 Mass Transfer and Staging Operations (4). F. Mass transport fundamentals (presented in Unit Operations I) are applied to

Chemical Engineering design problems. Principles of equilibrium and non-equilibrium mass transport operations are applied to distillation, gas absorption, extraction, and humidification design. Prerequisite: Engineering 330. *J. Van Antwerp.*

337 Chemical Engineering Laboratory (2). S. Principles of fluid flow, heat transfer, mass transfer, stage-operations, and chemical kinetics are studied using small-scale equipment. Evaluation and analysis of experimental observations, project proposals, and report writing is emphasized. Prerequisites: Engineering 331, 335, and Chemistry 317. *J. Van Antwerp.*

338 Introduction to Traffic Engineering and Highway Design (4). S, alternate years. Introduction to the basic concepts of traffic engineering and highway design. The traffic-engineering portion introduces the concepts of capacity and Level-of-Service as they pertain to freeways, signalized intersections, and freeway weave sections. Software applications are used for the optimization and stimulation of traffic signal networks. The highway design portion of the course focuses on the basics of horizontal and vertical alignment of roadways, design vehicle, design speed, superelevation, sight distance, and other design considerations. Prerequisite: Admission to engineering program or permission of the instructor. *Staff.*

339 Senior Design Project (2). F. This is the first course in the senior design project sequence. Emphasis is placed on design team formation, project identification, and production of a feasibility study. Students focus on the development of task specifications in light of the norms for design and preliminary validation of the design by means of basic analysis and appropriate prototyping. Lectures focus on integration of the design process with a reformed Christian worldview, team building, and state-of-the-art technical aspects of design. Interdisciplinary projects are encouraged. Prerequisites: Concurrent registration in the seventh semester of the model program for a particular concentration or permission of the instructors; Biblical Foundations I or Theological Foundation I, Developing a Christian Mind, and Philosophical Foundations. *Staff.*

340 Senior Design Project (4). S. This is the second course in the senior design project

sequence. Emphasis is placed on the completion of a major design project initiated in Engineering 339. This project should entail task specifications in light of the norms for design by means of engineering analysis and an appropriate prototype focused on primary functionality. A final presentation is given at the May senior design project banquet. Lectures continue to focus on integration of the design process with a reformed Christian worldview, team activity, and state-of-the-art technical aspects of design. Prerequisites: Engineering 339, Biblical Foundations I or Theological Foundations I, Developing a Christian Mind, and Philosophical Foundations. *Staff*.

342 Process Control (4). This course is 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 applications to process control are discussed. Prerequisites: Engineering 204 and Mathematics 231. *Staff*.

382 Engineering Instrumentation Laboratory (1). S. Laboratory course, which serves as an introduction to the characteristics and uses of transducers to measure displacement, strain, pressure, temperature, velocity, acceleration, and other physical quantities. Emphasis is on the usefulness, accuracy, and reliability of measurement systems in actual applications. Electronic signal conditioning techniques are covered. Written reports required. Prerequisites: Engineering 204 and 284. *Staff*.

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

Seminars/Internships

185/285/385 Engineering Internship (0). Students who complete an Engineering Internship during the summer as part of the department's internship program, may receive transcript recognition for their effort. Freshmen, sophomores, and juniors will receive credit for Engineering 185, 285, and 385 respectively. These internships, consisting of

engineering work at an appropriate level, should be for a minimum of nine (9), full-time, consecutive weeks. Students must provide a brief written report of their activities under the signature of their supervisor. The students must also make some type of presentation of their internship work during the following semester. The report and copies of the presentation material should be submitted to the department's internship coordinator for approval. Other procedures and activities may be given internship credit. Application for exceptional cases must be made to the internship coordinator. *E. Nielsen*.

294/394 Engineering Seminar (0). F and S. A seminar devoted to an exploration of topics in engineering. Seminars will cover areas such as the practice of engineering design, non-technical issues in engineering practice, engineering graduate studies, and aspects of engineering analysis. Students will receive transcript recognition for Engineering 294 if they attend eight (8) seminars after being admitted to a B.S.E. concentration. Plant tours and technical society meetings may be substituted for seminars upon approval. Engineering 294 is not a prerequisite for Engineering 394.

387 International Engineering Internship (0). Students, who complete an International Engineering Internship during the summer as part of the department's internship program, may receive transcript recognition for their effort. These internships, consisting of engineering work at an appropriate level, should be for a minimum of nine (9), full-time, consecutive weeks and shall take place in a country other than the United States and Canada. Students must provide a brief written report of their activities under the signature of their supervisor. The students must also make some type of presentation of their internship work during the following semester. The report and copies of the presentation material should be submitted to the internship coordinator for approval. Other procedures and activities may be given international internship credit. Application for exceptional cases must be made to the internship coordinator. *E. Nielsen*.

English

Professors **R. Anker, W. D. Brown, E. Ericson, S. Felch, D. Hettinga, N. Mpesha, K. Saupe
G. Schmidt, J.H. Timmerman, W. VandeKopple, **D. Ward, J. Netland (chair)

Associate Professors B. Ingraffia, J. VandenBosch

Assistant Professors C. Engbers, G. Fondse, J. Holberg, D. Hoolsema, N. Hull,

L. Naranjo-Huebl, C. Pollard, D. Rienstra, E. VanderLei

Adjunct Assistant Professor M. Admiraal

Instructor C. Engbers, K. Swedberg

The department offers a major and minor in English, majors and minors in secondary and elementary English education, a minor in linguistics, a minor in writing, and interdisciplinary minors in linguistics and in journalism. A student may alter any of the recommended programs with the permission of an academic advisor. All professors in the department advise for the general major and minor. The advisors for the secondary-education programs are D. Brown, K. Saupe, W. VandeKopple, and J. VandenBosch. The advisors for the elementary-education programs are D. Hettinga, N. Hull, and G. Schmidt. The advisor for the linguistics minor is W. VandeKopple. The advisor for the journalism minor is D. Hettinga. The advisor for the ESL minor is E. VanderLei. The advisors for the writing minor are D. Rienstra and D. Ward.

ENGLISH MAJOR

English 210 or 211

English 215, 302, 304, 305, or 307 [Either English 215 or 216, but not both, may be taken to satisfy these two line requirements]

English 216, 308, 309, 314, or 321

English 334, 337, 339, or 370

English 345, 346, 347, or 350

English 217 or 310 [Either English 217 or 218, but not both, may be taken to satisfy these two line requirements]

English 218, 311, 312, or 315

English 395

Four English electives

The four English electives include any English Department course with the exception of English 101, 356, 357, and 359.

Only one interim course may count towards the major.

ENGLISH MINOR

English 210 or 211

English 215, 216, 302, 304, 305, 307, 308, 309, 314, or 321

English 217, 218, 310, 311, 312, or 315

English 334, 337, 339, 345, 346, 347, 350, or 370

Three English electives

The three English electives include any English Department course with the exception of English 101, 356, 357, and 359.

Of the seven courses in the minor, at

least two must be 300-level courses in language or literature. Only one interim course may count toward the minor.

WRITING MINOR

English 275

English 301 or 355

English 201, 245, 262, 265, 380, or CAS/English 248

A literature course chosen in consultation with a program advisor

Two English electives from English 201, 245, 262, 265, 301, 355, 380, or CAS/English 248 chosen in consultation with a program advisor

One elective chosen in consultation with a program advisor

INTERDISCIPLINARY MINOR IN LINGUISTICS

English 334

English 337

CAS 140

CAS 216

Three electives chosen in consultation with the program advisor

SECONDARY EDUCATION MAJOR IN ENGLISH

English 210 or 211

English 215

English 216

English 217

English 218
English 283, 312, 320, 321, or 322
English 326
English 334, 335, or 337
English 338 or 339
English 346
English 357

Cognate

CAS 230

Ideally, students should take English 357 in the semester immediately preceding their student-teaching semester. Students must complete English 357 successfully before they may student-teach. For their student-teaching semester, students must register for both Education 346 and English 359. Before being considered for a student-teaching placement, however, students must pass all five sections of the English Department Screening Exam. This test is given in April, September, and October. Additional criteria for approval are found in the *Teacher Education Program Guidebook* available in the Education Department.

**SECONDARY EDUCATION
MINOR IN ENGLISH**

English 210 or 211
English 215 or 216
English 217 or 218
English 283, 312, 320, 321, or 322
English 334, 337, or 339
English 346
English 357

**ELEMENTARY EDUCATION
MAJOR IN ENGLISH**

English 210 or 211
English 215, 216, or 346
English 217 or 218
English 325
English 326 or 328
English 334, 337, or 339
English 283, 312, 320, 321, or 322
English 356
One English elective

Cognate

CAS 230

**ELEMENTARY EDUCATION
MINOR IN ENGLISH**

English 210 or 211
English 215 or 346

English 217 or 218
English 325 or 326
English 283, 312, 320, 321, or 322
English 356
One English elective

**ELEMENTARY EDUCATION
LANGUAGE ARTS GROUP MAJOR**

English 210 or 211
English 215, 216, or 346
English 217 or 218
English 283, 312, 320, 321, or 322
English 325
English 326 or 328
English 356
CAS 203 or 215
CAS 214
CAS 230
Two English or CAS electives

**ELEMENTARY EDUCATION
LANGUAGE ARTS GROUP MINOR**

English 210 or 211
English 215, 216, or 346
English 217 or 218
English 325 or 326
English 356
CAS 203 or 215
CAS 214
One English or CAS elective

**ENGLISH AS A SECOND LANGUAGE
ENDORSEMENT - ELEMENTARY OR
SECONDARY EDUCATION (33 hours)**

CAS 216
English 334
English 335
English 338
Interdisciplinary 301 (Elementary) or 302
(Secondary)
Sociology 253
An approved elective: See the *Teacher Education Guidebook* or an ESL advisor

Note: Students pursuing this endorsement must complete a semester of directed teaching in a regular classroom and an additional semester of directed teaching in an ESL classroom (Education 348 or 349).

Note: A non-education minor in ESL is also available and does not require the directed teaching or Interdisciplinary 301 or 302.

INTERDISCIPLINARY MINOR IN ESL

CAS 216

English 334

English 335

English 338

IDIS 301 or IDIS 302

Sociology 253

An approved elective

Note: Students seeking an endorsement on a Michigan Teaching Certificate must complete a full semester of student teaching in an ESL setting.

The advisors for the ESL programs are M. Pyper and E. VanderLei.

**INTERDISCIPLINARY MINOR
IN JOURNALISM**

CAS 230

English 245

English 265

Three electives chosen in consultation with the program advisor
English 380 or CAS 346

A minimum grade of "C" (2.0) in English 101 is required both for graduation and as a prerequisite to any concentration in the English Department. Normally, English 101 is the first course taken in the department. The core requirement, in written rhetoric, is met by English 101 or by examination. The literature core requirement is met by English 205, 210, 211, 215, 216, 217, 218, or 219.

COURSES

101 Written Rhetoric (3). F and S. In this course, students write several expository essays in which they practice rhetorical strategies, research-based argumentation, and methods of composing effective prose. In the process of writing these essays, students consider language as a means of discovering truth about God, the world, and themselves, and they explore its potential to communicate truth and, thereby, to transform culture. *Staff.*

201 Academic and Professional Writing (3). S. A second course in rhetoric and composition, designed for students who wish advanced study of academic writing practices. Includes reading, a consideration of the principles of written rhetoric, and extensive prac-

tice in writing short papers in a variety of academic traditions. Not offered 2002-03. *E. VanderLei.*

205 Understanding Literature (3). F and S. This course involves a study of selected literary works with an emphasis on the fundamental elements of literature and methods of reading. Discussion topics include the genres of literature and their conventions, the tools authors use to create meaning and effect, the ways readers can interpret and respond to texts, and the roles of imaginative literature in shaping and reflecting culture. An abiding concern will be how Christians might take a distinctive approach to this area of human culture. *Staff.*

210 World Literature I (3). F and S. This is a course of selected readings and lectures in the literature of the world from the ancient world through the Renaissance, with emphasis on the Western tradition. Additional attention will be given to the literatures of non-Western cultures, such as those of Asia, Latin American, and Africa. *Staff.*

211 World Literature II (3). F and S. This is a course of selected readings and lectures in the literature of the world from the Enlightenment to the present, with emphasis on the Western tradition. Additional attention is given to the literature of non-Western cultures, such as those of Asia, Latin American, and Africa. *Staff.*

215 Survey of British Literature I (3). F and S. This course surveys major works of British literature from its beginnings to the late eighteenth century. *Staff.*

216 Survey of British Literature II (3). F and S. This course surveys major works of British literature from the late eighteenth century into the twentieth century. *Staff.*

217 Survey of American Literature I (3). F and S. This course is a chronological study of representative works of the American literary landscape with special attention to various movements from Colonial literature through Realism. The course examines the difficult questions and struggles of human experience as they have been expressed in numerous literary genres from the very beginnings of American cultural history. *Staff.*

218 Survey of American Literature II (3). F and S. This is a chronological study of representative works of American literature with special attention paid to various movements from late Realism to the present. Students reflect upon contemporary cultural issues through this survey of historical and artistic works. *Staff.*

219 Survey of Canadian Literature (3). F, alternate years. This course is a survey of major works of Canadian literature from the nineteenth and twentieth century. Readings include fiction, poetry, and drama, with an emphasis on English Canadian writers. Some attention is given to French Canadian and Native Canadian writers in translation. *C. Pollard.*

245 Basic Journalism (3). F. A study of the principles and techniques of journalism—especially newspaper journalism—specifically, the definition of news and the varying policies governing the selection and presentation of local, national, and international stories. Against the background of a critical appraisal of current practices, students write, edit, and evaluate news reports and feature stories. *D. Hettinga.*

248 Writing for the Media (3). F. An introduction to the content, styles, and formats of media scripts. The course emphasizes the differences in media writing compared with more familiar forms of writing, the role of the script as text in producing media programs, the styles of writing used (journalistic, dramatic, polemical, and emotive), and the technical requirements for scripts used to focus the work of directors, actors, camera, and sound technicians, editors, and mixers in creating a media product. Also listed as Communication Arts and Sciences 248. Prerequisite: English 101.

251 Introduction to Cinema (3). F. A study of the development and structure of cinema as an art form and as a cultural medium. The course aims to develop the students' understanding of cinematic language and to guide them in assessing films and film values. Course work includes readings in film history and criticism, as well as the viewing and analysis of movies. Also listed as Communication Arts and Sciences 251. *R. Anker.*

262 Business Writing (3). I. A course introducing students to the kinds of writing and computer presentations that are required in business-related fields. Students collect examples of and practice composing the types of professional communication that they are likely to craft on the job. The class is conducted as a workshop; students consult with each other and with the instructor. Each student submits several projects. The class also includes a group report (with written, multimedia, and oral portions), in-class writing and computer exercises, and the use of word-processing and presentation software. Prerequisite: Completion of English 101 with a grade of C+ or above. *E. VanderLei, N. Hull.*

265 Feature Journalism (3). S. A course in the art of writing feature stories. The course pays particular attention to the process by which specialized information from various fields—government, science, engineering, medicine, law, religion, and business—is prepared for public comprehension. English 245 is recommended, but not required as a prerequisite. *W.D. Brown, D. Hettinga.*

275 The Craft of Writing (3). A course in the foundational principles and practices of writing. Students compose in a variety of written genres, exploring composition from two perspectives—how texts are constructed and what they accomplish. From these two perspectives students will consider the two classical categories of written genres: Poetics (the study of belletristic writing) and rhetoric (the study of persuasive writing). This is a foundational course for students who are interested in advanced study of writing. Prerequisite: English 101 or approval of the instructor. Not offered 2002-03.

283 African-American Literature (3). S. A chronological survey of major writers and works of African-American literature. Readings will include fiction, poetry, and drama, with special attention paid to historic and cultural contexts. *D. Ward.*

285 Russian Literature (3). F. A study of major Russian writers of the nineteenth and twentieth centuries. Authors to be read include, but are not limited to, Gogol, Turgenev, Dostoevsky, Tolstoy, Bulgakov, Akhmatova, and Solzhenitsyn. Special attention will be paid to spiritual and moral issues, which are

of central importance in the Russian literary tradition. Not offered 2002-03. *E. Ericson.*

290 Literature and Women (3). F Readings will emphasize poems, stories, plays, essays, and literary criticism written by women; these readings will include both the established (e.g., Jane Austen, Emily Dickinson, Edith Wharton, and Charlotte Bronte) and the re-covered (e.g., Anne Lock, Aphra Behn, Charlotte Smith, and Zora Neale Hurston). In addition to focusing on the many contributions made by women to literary culture, this course will examine male and female representations of the feminine experience as well as the issue of gender and its implication for literature. *J. Holberg.*

295 Studies in Literature (3). * F A special topics course. Not offered 2002-03.

301 Creative Non-fiction (3). * F A course in the principles and practice of creative non-fiction. Students will examine a variety of models and engage in extensive practice in the genre. Special emphasis will be given to the relationship of faith and art for the writer. Prerequisite: English 101. *E. VanderLei.*

302 British Literature of the Middle Ages (3). * F This course examines the ways in which the literature of the Anglo-Saxon and Middle English periods both reflect and impact the culture out of which they emerge. In studying an age in which art, philosophy, history, architecture, book making, and social and language issues converge in the literature in strikingly uniform ways, students will understand the engagement of many cultural forces and the effect of that engagement upon a culture's expression. *G. Schmidt, K. Saupe.*

304 British Literature of the Sixteenth Century (3). * F A study of the poetry and of some prose of the sixteenth century and of the drama of the sixteenth and early seventeenth centuries. Not offered 2002-03. *S. Felch.*

305 British Literature of the Seventeenth Century (3). * S. 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. Not offered 2002-03. *E. Ericson.*

307 British Literature of the Eighteenth Century (3). * S. A study of writing and its cultural contexts, with detailed attention to the

works of Dryden, Swift, Addison, Pope, Johnson, and Boswell. *D. Hoolsema.*

308 British Literature of the Early Nineteenth Century (3). * F A study of the Romantic writers of England in both poetry and prose, with intensive study of Blake, Wordsworth, Coleridge, Byron, Shelley, and Keats. *J. Netland.*

309 British Literature of the Middle and Later Nineteenth Century (3). * S. A study of the Victorian writers of England in both poetry and prose, including intensive study of Tennyson, the Brownings, and Arnold among the poets and Arnold, Newman, Carlyle, Huxley, and Ruskin among the prose writers. *J. Holberg, J. Netland.*

310 Literature of the United States I: Settlement to Civil War (3). * F A close examination of the fiction, poetry, and non-fiction prose of the United States prior to the Civil War. Special attention is given to major figures and cultural issues within the diverse literary landscape of America. Representative writers include Bradstreet, Hawthorne, Melville, Emerson, Thoreau, and Whitman. *R. Anker, W.D. Brown, J. Timmerman.*

311 Literature of the United States II: Civil War to the Great Depression (3). * F and S. A close examination of the fiction, poetry, and non-fiction prose of the United States from the Civil War to the Great Depression. Special attention is given to selected figures and cultural issues within the diverse literary landscape of America. Representative writers include Dickinson, Twain, Howells, James, Wharton, Cather, Fitzgerald, Robinson, Frost, and Eliot. *R. Anker, W.D. Brown, J. Timmerman.*

312 Literature of the United States III: World War II to Present (3). * S. A close examination of the fiction, poetry, and non-fiction prose of the United States from World War II to the present. Special attention is given to selected figures and cultural issues within the diverse literary landscape of America. Representative writers include Faulkner, O'Connor, Welty, Ellison, Roethke, Bellow, Baldwin, and Updike. *C. Pollard.*

314 The British Novel (3). * S. A study of the British novel from its origins through its proliferation of experimental forms in the early twentieth century. This course emphasizes the

art and thought of the major novelists, the growth of major strains such as epic, romantic, realistic, and symbolic fiction, and the history of ideas that influenced the growth of novelistic fiction. Not offered 2002-03. *J. Holberg, D. Ward.*

315 The American Novel (3). * F A chronological study of the major novels of the American literary tradition, with reference to the historical and cultural frame in which each work rests. Not offered 2002-03. *J. Timmerman.*

318 Non-Western Literature: Africa or South Asia (3). F or S. A historical survey of significant works of literature from a Non-Western region of the world. The focus of the course will alternate between the literature of Africa and South Asia. Offered in African Literature for fall 2002. *N. Mpesha.*

320 Modern British and American Poetry (3). * F Intensive reading of selected works of major twentieth-century British and American poets. *J. Timmerman.*

321 British and Commonwealth Literature of the Twentieth Century (3). * F The readings include fiction, poetry, drama, and non-fiction prose of twentieth-century British literature. Special attention is given to the emergence of high Modernism in the 1920's and 1930's, as well as its eventual permutation into Post-Modernism and to the effects of the two World Wars and the demise of the British Empire on the development of the January tradition. Selected writers include James Joyce, Virginia Woolf, T.S. Eliot, W.B. Yeats, Dylan Thomas, George Orwell, Doris Lessing, Graham Greene, V.S. Naipaul, and Derek Walcott. Not offered 2002-03. *C. Pollard.*

322 Modern Drama (3). * F A study of major British, American, and Continental playwrights of the twentieth century. Playwrights to be read may include, but are not limited to, Ibsen, Chekhov, Shaw, Pirandello, Brecht, Williams, Miller, O'Neill, Beckett, Pinter, Shaffer, Fugard, and Norman. Emphasis is placed on the significant movements in modern drama and questions of gender-based criticism. Not offered 2002-03.

325 Children's Literature (3). * F and S. A study of children's literature, including intensive reading of the best of this literature and

the application of literary standards to what is read. *D. Hettinga, N. Hull, G. Schmidt.*

326 Adolescent Literature (3). * F A study and critical evaluation of the nature and content of adolescent literature, including intensive reading, application of literary standards, and discussion of issues in the field of young adult literature: Censorship, selection criteria, reader-response theories, ethnicity, and gender-based criticism. *D. Hettinga.*

328 Recent Literature for Children (3). * S. A survey and evaluation of children's and young adult literature, with emphasis on the more recent literature; consideration of criteria for selecting such literature in the classroom; examination of reference tools, recent and historical trends; issues and approaches to understanding children's and young adult literature; and study of several representative works. Prerequisite: English 325 or English 326. *G. Schmidt, D. Hettinga.*

334 Linguistics (3). * F and S. A study of some of the more interesting and important characteristics of language, with particular attention given to the processes of language acquisition; to patterns and effects of linguistic change through time; to variations in language from region to region, social class to social class, and gender to gender; and to the assumptions informing the nomenclature, methodology, and scope of traditional, structural, transformational, generative-semantic, and text grammars. The course incidentally considers the relationship of these grammars to the study of reading and composition. *W. VandeKopple, J. VandenBosch, E. VanderLei.*

335 Sociolinguistics and Issues in Language Education (3). * F This course involves two major activities: (1) An examination of selected topics that have arisen in recent sociolinguistic research, particularly those topics centering on questions about how standard and nonstandard languages and dialects appear to affect people's educational success; and (2) an evaluation of how these topics should affect approaches to language education, particularly approaches to teaching English as a Second Language (ESL). Prerequisite: English 101. *W. VandeKopple.*

337 History of the English Language (3). * 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. *J. VandenBosch.*

338 Grammar for Teachers of ESL (3). * S. In this course, students will review the fundamentals of English grammar, learn of the possibilities and limitations of teaching grammar in the ESL classroom, and research or practice the teaching of some of this grammatical material, so that they can make the most of that part of the ESL curriculum typically dedicated to the teaching of grammar. Prerequisite: English 101. *J. VandenBosch.*

339 English Grammar (3). * I. A study of traditional grammar, focusing on its history, its system, its applications, its competitors, and its place in the middle school and high school classroom; special emphasis will be given to the system and terminology of this grammar. *W. VandeKopple, J. VandenBosch.*

345 Chaucer (3). * S. A study of Chaucer's *Canterbury Tales* and selections from his minor work, which reflect his handling of the major cultural and religious events and issues of his time. Supplementary study of other works and literary movements related to the period are included. Not offered 2002-03. *K. Saupe, G. Schmidt.*

346 Shakespeare (3). * F and S. A study of the major works of William Shakespeare. *S. Felch, K. Saupe, D. Rienstra.*

347 Milton (3). * S. A study of the poetry and prose of John Milton. *E. Ericson.*

350 Major Authors (3). * S. A course focusing on the major and minor works of a single author by examining that author's writings in their historical, cultural, and religious contexts; every other year, the department will select a major author to be studied. Not offered 2002-03. *Staff.*

355 Creative Writing (3). * S. A course in the principles and practice of fiction or poetry, with the emphasis to be announced prior to registration each time the course is offered. Students will examine a variety of models and engage in extensive practice. Special emphasis will be given to the relationship of faith and art for the writer. Students may take both

the fiction and the poetry version of the course for credit. *D. Rienstra.*

356 Language, Grammar, and Writing for the Elementary (3). * F An introduction to several significant and practical aspects of the nature of language, a review of the nature of traditional grammar, including some comparisons of traditional grammar with more recently developed grammars, and an exploration of the relationships between these grammars and composition instruction and practice. *W. VandeKopple.*

357 Teaching of Writing (3). * F A course in the principles, practice, and pedagogy of composition, especially as these apply to middle and high school writing programs. Extensive reading and frequent exercises in composition, revision, and evaluation. Majors in secondary education programs must take this course in the fall semester of their final year. *D. Ward.*

359 Seminar in Principles of and Practices in Secondary Education (3). S. A course in perspectives on, principles of, and practices in the teaching of English on the secondary level. This course should be taken concurrently with Education 346: Directed Teaching. Before taking English 359, students must pass the English Department Screening Exam and complete English 357 (formerly English 336), and Education 301/303. Before taking English 359, students normally also complete Education 304, Education 307, and Education 308. *W. VandeKopple.*

370 Literary Theory and Criticism (3). * F 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. Not offered 2002-03. *S. Felch.*

380 Internship in Journalism and Publishing (4). S. A practicum permitting students to apply theoretical, technical, and ethical principles to specific journalistic activities. Students may be placed with the publishers of magazines or newspapers, publishing houses, or other businesses. Each student works ten hours per week under an agency supervisor and participates in seminars on

campus. Prerequisites: Junior or senior status, a 2.5 college GPA, an average grade of 2.5 or higher in advanced writing courses taken (English 245, 265, 301, and 355), and permission of the English Department internship supervisor. *D. Hettinga.*

390 Independent Study (3). F, I, and S. Prerequisite: Permission of the department chair. *Staff.*

395 Senior Seminar (3). F and S. As the capstone course in the English departmental major, this senior seminar is designed to nurture Christian reflection on issues related to language and literary studies such as the significance of story and literary expression, the relationship of language and meaning, and the ethical implications of language and story. Students also consider vocational opportunities for those who love words. These contemporary literary and linguistic issues are framed by readings from within the tradition of Christian aesthetic reflection as well as from Reformed cultural criticism and theology. Prerequisites: Biblical Foundations I or Theological Foundations I, Developing a Christian Mind, and Philosophical Foundations. *Staff.*

399 Honors Thesis (3). F and S. A substantial work of research and criticism in the field of language or literature; required for those graduating with English Departmental Honors. *Staff.*

Graduate Courses

510 Literature for the Adolescent (3). 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.

511 Studies in Analytical Approaches to the Teaching of Literature (3). 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.

531 Language and the Elementary Classroom (3). A study of some aspects of traditional grammar and an introduction to the history of the English language, and an examination of current linguistic theory and concerns. Special emphasis is placed on the implications of this knowledge for classroom teaching.

537 Teaching of Writing in Elementary and Middle Schools (3). 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.

580 Principles, Practices, and Programs in Secondary English Education (3). An advanced methods course for those teachers working at the middle school or high school level, involving general principles, materials, and pedagogical practices with emphasis on current trends. Each student will make a special study of a given area of language, composition, or literature.

581 Methods and Materials in the Language Arts (3). A study of programs and techniques of effective teaching of language arts in the elementary school and a review of current materials in relationship to improvement of instruction.

590 Independent Study.

Environmental Science, Environmental Studies

The College offers a major program of concentration in Environmental Science with an emphasis in either biology, chemistry, or geology and it offers a group minor in Environmental Studies. The Environmental Science major program of concentration is intended for students who plan to pursue a career requiring scientific training in environmental problems and their solutions. The major will prepare students for jobs in a variety of fields of will prepare them for further study in certain graduate programs such as ecology, environmental science, natural resource management, or environmental biology. Students interested in environmental issues, but who wish to pursue graduate study in chemistry or geology, are encouraged to complete a disciplinary major and the environmental studies minor.

Students who major in environmental science must choose one of three emphases. Those interested in careers in environmental biology should complete the biology emphasis; and those interested in careers in environmental geology should follow the geology emphasis.

The Environmental Studies group minor program of concentration is intended for students who are following a disciplinary major and who also have an interest in studying a broad range of environmental problems and issues at the local, national, and global levels. Because the study of such issues is truly interdisciplinary in scope, the environmental studies minor is appropriate for students majoring in the humanities, the social sciences, or the natural sciences. While disciplinary majors with environmental interest are encouraged to complete the entire group minor, the Environmental Studies courses also may be taken singly as electives to enrich a program of study.

The advisor for students who choose the biology emphasis is U. Zylstra; the advisor for students who choose the chemistry emphasis is K. Piers; and the advisor for students who choose the geology emphasis is R. Stearley. The advisor for the Environmental Studies group minor program is H. Aay.

ENVIRONMENTAL SCIENCE MAJOR— BIOLOGY EMPHASIS

Biology 141
Biology 242
Biology 243
Biology 345
Two of Biology 336, 341, 344, 346, or approved 300-level courses
Chemistry 103
Chemistry 104
Chemistry 253 or 261
Chemistry 271-281
Geology 151
Geology 311
Geology 312

ENVIRONMENTAL SCIENCE MAJOR— CHEMISTRY EMPHASIS

Chemistry 103
Chemistry 104
Chemistry 201
Chemistry 253 or 261
Chemistry 271-281

One of Chemistry 262, 304, or 323
Biology 141
Biology 242
Biology 345
Geology 151
Geology 311
Geology 312
One of Biology 243 or Geology 212, 302, 304, or approved alternative

ENVIRONMENTAL SCIENCE MAJOR— GEOLOGY EMPHASIS

Geology 151
Geology 152
Geology 201
Geology 311
Geology 312
Biology 141
Biology 243
Biology 345
One of Biology 242 or Geology 212, 302, 304 or approved alternative
Chemistry 103
Chemistry 104

Chemistry 253 or 261
Chemistry 271 and 281

**Environmental Science Cognates
(all emphases)**

Mathematics 143-132 or Mathematics 161-162 and 243
Environmental Studies 210
Environmental Studies 302
Environmental Studies 395

In order to be admitted as a major in the Environmental Science program, a student must have completed three college-level science courses with a minimum grade of “C” (2.0) in each course and be approved by the committee, which oversees the Environmental Science program.

Beyond the requirements of the general honors program, the Honors Program in Environmental Science requires: 1) A cumulative grade point average of at least 3.3 in courses contributing to the major; 2) one course taken for honors among Biology 141 or 242, Chemistry 103, or Geology 151; 3) one course taken for honors between Environmental Studies 210 or 302; 4) one course taken for honors among Biology 345, Chemistry 271 or 281, or Geology 312; 5) completion of Environmental Studies 395 with honors; and 6) completion of a practical experience through Environmental Studies 385, an independent study (390 course) in Biology, Chemistry, or Geology, or another approved practicum.

**GROUP MINOR IN
ENVIRONMENTAL STUDIES**

Environmental Studies 210
Environmental Studies 302
Environmental Studies 395
Two electives from Biology 345, 352; CAS 395; Chemistry 101; Environmental Studies 385; Economics 332; Engineering 306; Geography 110, 120, 220, 250, 251, 320, 351; Geology 151, 311, 312 or an approved interim course.
One additional course approved by the program advisor

**ELEMENTARY AND SECONDARY
GENERAL SCIENCE STUDIES MAJOR**

The elementary and secondary group science majors require at least 36 hours of natural science courses, which are selected in con-

sultation with a science education advisor. The major includes at least four semester hours in each of biology, chemistry, physics and earth science; a pre-approved course that discusses the relationships among science, technology, and society; and course sequence(s) in particular science areas which are chosen in consultation with the science education advisor. Cognate courses may also be required (e.g., Mathematics 110, 143, or 161). A more detailed description of this program can be found in the *Teacher Education Program Guidebook*. Science Education Advisors: Secondary: U. Zylstra, Biology Department; Elementary: S. Haan and J. Jadrlich, Physics Department.

**ELEMENTARY AND SECONDARY
GENERAL SCIENCE STUDIES MINOR**

The elementary and secondary group science majors require at least 24 hours of natural science courses, which are selected in consultation with a science education advisor. Both elementary and secondary minors require at least four semester hours in each of biology, chemistry, physics, and earth science. The secondary minor requires a sequence of approved courses in one particular science area and a pre-approved course that discusses the relationships among science, technology, and society. Cognate courses may also be required (e.g., Mathematics 110, 143, or 161). A more detailed description of this program can be found in the *Teacher Education Program Guidebook*. Science Education Advisors: Secondary: U. Zylstra, Biology Department; Elementary: S. Haan and J. Jadrlich, Physics Department.

COURSES

210 Human Modifications of the Global Environment (3). F and S. As population and affluence have increased and technology's role has grown, human activities have transformed natural environments around the globe. This course surveys and examines how a wide variety of human enterprises such as agriculture, industry, recreation, and urbanization have had and continue to have far-reaching environmental consequences everywhere on earth. These impacts are assessed by standards such as ecological well being and sustainability, human habitability, and qual-

ity of life. Not open to first-year students. Also listed as Geography 210. *H. Aay*.

302 Environment and Society: Issues and Policies (3). * S. The interactions among population, resources, technology, economics, and public policy are studied in order to understand and address the environmental issues and problems of our day. Attention is focused upon energy, material, and food resource issues as well as upon population and resource relationships. Political, economic, and technological policies plus individual lifestyles are considered as part of responsible earthkeeping. Not open to first-year students. Prerequisite: Environmental Studies 210 or permission of the instructor. *J. Curry*.

385 Internship in Environmental Studies (3). * F or S. This course is an internship involving field application of the concepts and principles learned as part of the environmental studies supplementary concentration or the environmental science group concentration. A student is placed in a position in a governmental agency, a not-for-profit organization,

or a corporate firm, which builds on previous instruction in the student's program of concentration in an area related to environmental matters. Students are assigned a specific project and work under the direct supervision of an employee of the governmental, non-profit, or business entity, as well as under the supervision of the instructor. Prerequisites: Environmental Studies 210, 302, and permission of the instructor. *H. Aay*.

395 History and Philosophy of Environmental Thought (3). * S. This course aims to develop a Christian philosophy of the environment and environmental management. Issues, problems, and controversies in environmental ethics are explored. Environmental thought is explored historically, through the perspectives of contemporary environmental movements, and finally from a Reformed, Christian perspective. Prerequisites: Environmental Studies 210 and 302 or permission of the instructor; Biblical Foundations I or Theological Foundations I, Developing a Christian Mind, and Philosophical Foundations. *K. Groenedyk*.

French

Professors G. Fetzer, O. Selles (chair)

Assistant Professors I. Konyndyk, L. Mathews, J. Vos-Camy, J. Pettes

The department offers courses of study for students interested in continuing work on the graduate level, for those interested in careers in which foreign language plays a key role, and for those interested in teaching French at the secondary or elementary school levels. Programs in the department include major or minor concentrations in French and major and minor concentrations in secondary and elementary education. Approved courses from Calvin's Semester in France program may be applied to the program of concentration. The core language requirement may be met by the Semester in Grenoble, France program (Spring 2003). The Cross-Cultural Engagement core requirement may be met by the department's W60, W80 interim courses, or by the Semester in France program. The core literature requirement may be met by one of the following: French 311, 312, 313, or 314. The advisor for this program is O. Selles. Major and minor students are encouraged to consult the *French Department Handbook*, available from the departmental office.

FRENCH MAJOR: 32 semester hours

French 215
French 216
French 217

Two from French 219, 220, or 221
Three from French 295, 311, 312, 313, 314,
315, 371, or the department's Interim
abroad (W80)

Seven semester hours of electives, excluding French 356, 357, and 359

FRENCH MINOR: 23 semester hours

French 215

French 216

French 217

One from French 219, 220, or 221

Ten semester hours of electives, excluding French 356, 357, and 359

To be eligible for a major concentration in general French studies, a student must have completed at least two courses in French with a minimum grade of “C” (2.0) and must have completed French 101-102, French 121, or the equivalent.

FRENCH ELEMENTARY/SECONDARY EDUCATION MAJOR: 32-33 SEMESTER HOURS

French 215

French 216

French 217

French 315

Two from French 219, 220, or 221

Two courses from French 295, 311, 312, 313, 314, 371, or the department’s Interim Abroad (W80)

Two approved electives from courses beyond French 102 or 121

NOTE: Students intending to qualify for the K-12 endorsement must take the secondary major and will spend part of the student teaching semester in an elementary setting and part in a secondary setting. They must also take French 356 as one of their electives before student teaching.

FRENCH ELEMENTARY/SECONDARY EDUCATION MINOR: 22-23 SEMESTER HOURS

French 215

French 216

French 217

One course from French 219, 220, or 221

Three approved electives from courses beyond French 102 or 121

In order to qualify for the elementary or secondary teaching internship in French, all major and minor students are expected to pass, prior to the teaching internship, a departmental oral proficiency exam and a written test in addition to the competency exam

administered by the State of Michigan. A ranking of Intermediate-High on the ACTFL Proficiency Scale constitutes the desired level of proficiency. Directed teaching in French is available only during the spring semester. Students interested in the teacher education options should consult the *Teacher Education Program Guidebook*, available from the Education Department. To be admitted to the Teacher Education Program, a student must have a cumulative GPA of at least 2.5 in the courses required for the major and/or minor.

Completion of French 113, 123, or 202 satisfies the college language requirement.

Semester in Grenoble, France. During the spring semester on alternate years, Calvin offers its own full-time language program in Grenoble, France, through which students can complete the core-program courses French 101, 102, 201, and 202 to satisfy the college foreign language requirement. Calvin also offers an advanced language and literature program during the spring Semester in Grenoble. Under the auspices of the Centre Universitaire d’Etudes Françaises of the Université Stendhal, students in the advanced program take 12-14 semester hours of language, literature, and culture. The advisor for this program is O. Selles. The next time the program is offered will be Spring, 2003.

COURSES

101 **Elementary French** (4). F. An introductory course in the comprehension and use of spoken and written French. *O. Selles.*

102 **Elementary French** (4). S. Continuation of French 101. *Staff.*

111 **Multisensory Structured French I** (4). F. An introductory course in the comprehension and use of spoken and written French designed to meet the special needs of at-risk students. Materials are presented with an emphasis on understanding the nature of language. General language-learning skills are developed as specific foreign language goals are met. Students are assigned to this course on the basis of adequate documentation of being at-risk. *I. Konyndyk.*

112 **Multisensory Structured French II** (3). I. The second course in a three-course sequence of language study designed to meet

the special needs of at-risk students. Materials are presented with an emphasis on understanding the nature of language. General language-learning skills are developed as specific foreign language goals are met. The course is open to students who, on the basis of adequate documentation, are continuing from French 111 and expect to complete through the French 113 level. *I. Konyndyk.*

113 Multisensory Structured French III (4). S. The third course in a three-course sequence of language study designed to meet the special needs of at-risk students. Materials are presented with an emphasis on understanding the nature of language. Introduction to cultures where French is spoken, including North Africa, West Africa, and Quebec provides the opportunity for understanding how the language and culture interacts to shape expression in various contexts. The course is open to students who, on the basis of adequate documentation, are continuing from French 112. Completion of French 113 satisfies the foreign language requirements. *I. Konyndyk.*

121 Introductory French (4). F. The first course in a closely integrated and intensive sequence of language study involving two semesters and the interim, for students who have completed two years of high school French, but who, on the basis of a placement test, are not prepared for French 201. The course is also open with the permission of the department to students who have had no French in high school. *L. Mathews.*

122 Intermediate French (3). I. The second course in a closely integrated and intensive sequence of language study involving two semesters and the interim, for students who have complete two years of high school French, but who, on the basis of a placement test, are not prepared for French 201. *L. Mathews, J. Pettes.*

123 Intermediate French (4). S. This is the third course in a three-course intensive sequence of language study, which aims to develop proficiency in the areas of listening, speaking, reading, and writing in French, allowing an intermediate level of interaction with native speakers and understanding of authentic text. An introductory study of francophone cultures provides insights into

the historical, cultural, sociological and faith contexts that have shaped the French language. Completion of French 123 (or French 202) satisfies the foreign language core requirement. *L. Mathews.*

201 Intermediate French (4). F. Further training in oral and written French, study of the structure of the language, practice in speaking, listening, reading, writing and introductory study of francophone cultures. *J. Pettes.*

202 Intermediate French (4). F and S. Further training in spoken and written French, study of the structure of the language, practice in listening, reading, and writing, and continuing study of francophone cultures. This final course in the four-course sequence provides insights into the historical, cultural, sociological, and faith contexts, which have shaped the French language. Completion of French 202 (or 123) satisfies the foreign language core requirement. *J. Pettes.*

215 Advanced Conversation (3). F. This course is designed to develop advanced oral comprehension skills, as well as continuing competence in spoken French through exercises, drills, conversation in class, and in small groups. Prerequisite: French 123, 202, or the equivalent. *J. Vos-Camy.*

216 Advanced Grammar and Composition (3). S. Systematic study of advanced grammar and composition. Prerequisite: French 123, 202, or the equivalent. *J. Vos-Camy.*

315 Advanced Stylistics and Phonetics (3). S. For teacher education candidates and for students who wish to increase fluency in oral and written French. Continued study of selected areas of the French language, such as grammar, pronunciation, vocabulary, stylistics, and the written dissertation. Prerequisite: French 216 or the equivalent. Not offered 2002-03.

356 Foreign Language Education in the Elementary School (3). I. Theory and practice of foreign language teaching in the elementary school. Study of language skill development, second language acquisition, methodologies, curriculum, and programs. Elective, but required for K-12 endorsement. If elected, to be taken prior to Education 346 and French 359. *Staff.*

357 Introduction to Foreign Language Pedagogy (3). F An introduction to the major principles and practices of foreign language pedagogy, offering a study of various methodologies and the major controversies associated with them. The course explores how a Christian approach to education affects foreign language pedagogy and how foreign language pedagogy interacts with the language learner's personal growth. It also introduces the prospective educator to the teaching of the basic skills, to issues in evaluation and assessment, and the use of technologies in the foreign language classroom. This course should be taken in the junior or senior year, prior to student teaching. Required for secondary certification. Prerequisite: Completion of or concurrent registration with Education 301/303. *D. Smith.*

359 Seminar in Secondary Foreign Language Pedagogy (3). S A seminar reinforcing the major principles and practices of foreign language pedagogy on the secondary level for students during their semester of directed teaching. The course will provide an opportunity for collaborative work on putting theoretical and pedagogical matters of immediate concern into a practical framework. This course does not count as part of the major or minor program. Prerequisites: Education 301/303, concurrent registration in Education 346, and successful completion of the department proficiency exam. *M. Pyper.*

Literature and Civilization

217 Introduction to French Literature (4). S. An overview of selected major writers, movements, and genres from the Middle Ages to the present. Conducted mainly in French. Prerequisite: French 215 or 216. *J. Vos-Camy.*

219 Francophone Literature (3). F An introduction to representative writers and works of French expression from outside France, especially those of Africa, Canada, and the Caribbean. Conducted mainly in French. Prerequisite: French 215 or 216. *J. Vos-Camy.*

220 French Culture and Society Through the Media Arts (3). S. A study of current and popular French culture and society as perceived and created through various forms of literature and media art. Conducted mainly in French. Prerequisite: French 215 or 216. Not offered 2002-03.

221 French for the Professions (3). F An introduction to the terminology and standard forms of oral and written communication used in selected professions in the francophone world, especially France. The course also considers the cultural and economic context of that communication. Conducted mainly in French. Prerequisite: French 215 or French 202 with permission of the instructor. Not offered 2002-03.

295 Special Topics in French (3). *S. J. Pettes.*

311 French Drama (3). A study of the evolution of the theater in France, from the liturgical dramas of the Middle Ages to the theatre of the absurd of the twentieth century. Conducted in French. Prerequisite: French 217, 219, or 220.

312 French Prose I (3). F A study of major literary works of fiction and non-fiction from the Middle Ages through the French Revolution. Conducted in French. Prerequisite: French 217, 219, or 220. *O. Selles.*

313 French Poetry (3). * S. This course studies the history and nature of French poetry by means of extensive reading and examination of representative poets, with special attention to those of the modern period. Major figures include Villon, Ronsard, Baudelaire, Rimbaud, Mallarme, Valery, and Bonnefoy. Attention to key polemical debates leads to broader considerations of language, art, and culture and helps students appreciate the ways in which poetry informs our understanding of the human experience. Classes are conducted in French. Prerequisite: French 217, 219, or 220. Not offered 2002-03.

314 French Prose II (3). A study of major literary works of fiction and non-fiction from the French Revolution to the present. Conducted in French. Not offered 2002-03.

371 Literary Doctrines and Problems (3). A study of literary works and selected critical perspectives in the French tradition that inform our appreciation of those works. Readings include major literary works and representative voices from the history of French critical discourse, and may include Saussure, Blanchot, Cixous, Baudrillard, Lyotard, and others. Conducted in French and English. Not offered 2002-03.

Gender Studies

An interdisciplinary minor, Gender Studies focuses on gender issues and relations, locating them within a Christian worldview. The minor consists of six courses taken from at least four different departments. No more than one interim is allowed in the minor. The program director is H. Sterk, of the Communication Arts and Sciences Department. Program advisors include: M. Bendroth (History), C. Beversluis (Psychology), H. Bouma III (Biology), C. deGroot (Religion), R. Groenhout (Philosophy), J. Holberg (English), and M. Mathews (Religion).

THE MINOR REQUIRES:

Three courses drawn from the following regularly offered gender-focused courses:

CAS 270
English 290
History 256 or 268
Women's Health Interim
Philosophy 211
Psychology 222
Sociology 250
Political Science 312

Two additional gender-focused or gender-cognate courses drawn from the following:

Any of the above listed courses;
Or, special topics, gender centered courses, such as:
Religion 313
An approved interim
Or, a gender-cognate course in which the student negotiates a contract in a non gender focused class to add a significant and theoretically focused gender com-

ponent to normal class requirements. These components may include, but are not limited to, additional readings and guided research of a typical paper. It could factor into an honors contract. The course professor must be committed to providing guidance in the area of gender analysis as it affects the content of the course. The contract should be developed in consultation with the director of the Gender Studies Minor. *Only one gender-cognate course may count towards the minor.*

Interdisciplinary 394

COURSES

IDIS 394 **Gender Studies Capstone (3)**. S. An integrative course that refers to previous work in the minor, focusing particularly on current research, theory, and controversies in the field. Special attention will be paid to nurturing mature Christian thinking on gender issues.

Geology and Geography

Professors H. Aay (chair), J. Bascom, †J. Curry, R. Stearley, G. Van Kooten, D. Young
Assistant Professors K. Bergwerff, D. van Dijk

Programs in the department include major and minor concentrations in geology, a major and a minor in geography, a group minor in environmental studies, as well as majors and minors for teacher education programs. Group majors consisting of geology, chemistry, engineering, or physics are also available.

GEOLOGY MAJOR

Geology 151 or 120
Geology 152
Geology 201
Geology 202

Geology 212
Geology 385
Geology 386
Four Geology electives

Cognate

Chemistry 103

For those wishing to pursue a career or graduate study in geology the following courses are recommended:

Geology 151
 Geology 152
 Geology 201
 Geology 202
 Geology 212
 Geology 301
 Geology 302
 Geology 311
 Geology 313
 Geology 385
 Geology 386
 Geology 395 or 396
 Field camp

Cognates

Chemistry 103
 Chemistry 104
 Physics 123
 Physics 124
 Physics 181
 Physics 182
 Mathematics 161
 Mathematics 162

ENVIRONMENTAL GEOLOGY MAJOR

Geology 151
 Geology 152
 Geology 201
 Geology 212
 Geology 302
 Geology 312
 Geology 314
 Geography 221
 Geography 222
 Geology/Geography 311
 Geology 385
 Geology 386 or Environmental Studies 395
 Environmental Studies 210
 Environmental Studies 302
 Environmental Studies 385 or Field Course

Cognates

Chemistry 103
 Chemistry 104 or 106
 Mathematics 161 or 143
 Mathematics 162 or 132
 One elective from Engineering 306,
 Physics 133, Geology/Geography 251,
 321, Geology 304, 331, or Chemistry 253

GEOLOGY MINOR

Geology 151 or 120
 Geology 152
 Geology 201
 Geology 212
 Two geology electives

GEOLOGY/EARTH SCIENCE MAJOR FOR SECONDARY EDUCATION

Geology 151
 Geology 152
 Geology 201
 Geology 212
 Geology 251
 Astronomy 110 or 201
 Geography/Interdisciplinary 191
 Environmental studies 210
 One elective from Geology 202, 220, 301,
 302, 304, 311, 312, 313, 314, 321, or
 331

Cognates

Mathematics 110 (or higher)
 Mathematics 143
 Sixteen semester hours from among college
 biology, chemistry, and physics with at
 least one semester of each of the three

GEOLOGY SECONDARY EDUCATION MINOR

Geology 151
 Geology 152
 Geology 201
 Geology 212
 Astronomy 110 or 201
 An approved elective

GEOGRAPHY MAJOR

Geography 110
 Geography 120
 Geography 210
 Geography 221
 Geography 222
 Geography 230
 Geography 310
 Geography 311
 Geography 320
 Geography 380
 Two from Geography 191, 240, 241, 242,
 251, 321, 351, 385, 390, 395, or Envi-
 ronmental Studies 302, an approved in-
 terim course

Cognate

Mathematics 143 or Psychology 255

GEOGRAPHY MINOR

Geography 110
 Geography 120
 Geography 210
 Geography 230
 Geography 320
 One elective

**GEOGRAPHY ELEMENTARY
EDUCATION MAJOR**

Geography 110
 Geography 120
 Geography 210
 Geography 220
 Geography 230
 Geography 241
 Geography 311
 Geography 320

At least four semester hours of electives from the approved list, which can be found in the *Teacher Education Guidebook*

**ELEMENTARY/SECONDARY
EDUCATION GEOGRAPHY MINOR**

Geography 110
 Geography 120
 Geography 210
 Geography 241

Two electives: See *Teacher Education Guidebook* for list of applicable electives

**ELEMENTARY SOCIAL STUDIES
GROUP MAJOR**

Students must take two specified courses from each of the following four disciplines: Economics, Geography, History, and Political Science. (Specific course choices are listed in the *Teacher Education Program Guidebook*). In addition, students must complete a sequence of courses from one of these disciplines chosen in consultation with a social studies education advisor. Advisors: D. Miller and D. Howard, History Department.

**ELEMENTARY AND SECONDARY
SOCIAL STUDIES GROUP MINOR**

Economics 221
 Economics 222
 Geography 110
 One course from Geography 210, 230, 310, or 320
 History 151 or 152
 History 229

Political Science 101
 Political Science 202

**GROUP MAJORS IN GEOLOGY AND
GEOGRAPHY**

A group major meets the needs of some students, particularly those in professional programs. Such group majors require twelve courses, 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 chairs of the three departments involved must approve such programs.

**MAJORS IN GEOLOGY AND
GEOGRAPHY**

Students must have completed at least two courses in geology or geography with a minimum average grade of "C" (2.0) before they may be formally admitted to the major program. The core requirement in the physical sciences may be met by Geography/Geology 120, 191, 251, or Geology 151. The core requirement in the natural world category may be met by Geology 151-152.

COURSES**Geography**

110 **World Regional Geography** (4). F and S. An analysis of the earth's principal culture regions from a geographic perspective: Europe, C.I.S., Middle East, East, South and South-East Asia, Australia and New Zealand, Oceania, and South, Central, and North America. These areas will be examined in the light of several foundational geographic themes: The locational organization of physical and cultural features; society-land relationships, cultural landscapes, and patterns of spatial interaction among and within regions. *H. Aay, J. Bascom.*

120 **Earth Systems** (4). F and S. This course includes an introductory study of physical systems and historical processes that shape the surface of the earth. Topics include: 1) The physical nature of the earth's surface based on composition of earth materials and the forces that create landforms, 2) weather and climatic systems and their effect on the global distribution of soils and ecological communities, and 3) the oceans. Understanding

of earth systems is applied to concepts of stewardship, resource use, and energy consumption. Laboratory. Also listed as Geology 120. *D. van Dijk*.

191 Introductory Meteorology (4). S. This course is a study of the atmosphere and the complex processes that control weather and climate. Special attention is given to: The different forms of energy that are operative in the atmosphere and how these control temperature; the various optical phenomena that are observed in the atmosphere; the hydrologic cycle and the mechanisms of cloud formation and precipitation; air pressure and the winds that result from its differences at the surface and aloft; and the formation of air masses and their movement as frontal systems. Human interactions with atmospheric processes will be examined, including the topics of air pollution, hurricanes, tornadoes, ozone depletion, global warming, acid rain, and photochemical smog. Laboratory. Also listed as Interdisciplinary 191. Prerequisite: High school chemistry or equivalent. *R. Blankespoor*.

210 Human Modifications of the Global Environment (3). F and S. As population and affluence have increased and technology's role has grown, human activities have transformed natural environments around the globe. This course surveys and examines how a wide variety of human enterprises such as agriculture, industry, recreation, and urbanization have had and continue to have far-reaching environmental consequences everywhere on earth. These impacts are assessed by standards such as ecological well being and sustainability, human habitability, and quality of life. Not open to first-year students. Also listed as Environmental Studies 210. *H. Aay*.

221 Cartography (2). Map design and interpretation with an emphasis upon computer cartographic methods. Course includes portrayal of spatial data and the use of remote sensed data for cartographic purposes. Lab exercises will focus on practical applications of cartographic principles using Canvas software. Note: Geography 221 and 222 are taught as two six-week segments in the same semester. *J. Bascom*.

222 Geographic Information Science (2). S. Focus on geographic information systems

(GIS), a computer method that seeks relationships among map systems and spatial databases. Lab work will develop GIS fluency using the latest version of ArcView software and include experiences merging data from multiple sources and formats. Students will complete GIS projects that are tailored to their disciplinary interests. Note: Geography 221 and 222 are taught in sequence as two six-week segments in the same semester. Prerequisite: Geography 221 or permission of the instructor based on previous training or experience commensurate with Geography 221. *J. Hoekstra*.

230 The Geography of the Global Economy (3). * F; alternate years. This course traces the geographical and structural evolution of the global economic system. Includes analysis of human interaction with Earth's resources, the impact of distance and relative location on various economic activities, exchange and interaction patterns among places, and theories of uneven development. Prerequisite: Geography 110 or an economics course. Not offered 2002-03.

240 The Geography of Latin America (3). * S, alternate years. A survey of the geography of Latin America with an emphasis on the region's physical, cultural, and economic diversity and with a particular focus on issues of development and poverty. Emphasis is put on historic migrations, physical resources, and relative location in the understanding of the formation of regional patterns. Not offered 2002-03.

241 The Geography of the United States and Canada (3). * S. This course provides an overview of the geographic forces that shaped this region of North America. These forces include natural processes and the distribution of resources, structures of the market economy, relative location of resources and markets, and the history of migration. These processes are used as a framework for the analysis of the regional economic and cultural patterns of North America with an emphasis on worldview as a formative agent in the creation of this regionalization. Not offered 2002-03.

242 The Geography of Africa (3). S, alternate years. A survey of the geography of Africa with a focus on the region's physical, cultural, and economic diversity. Featured em-

phases include the historical experience of colonialism, challenges of environmental degradation, spatial patterns of forced and voluntary migration, intensification of poverty under structural adjustment programs, and the quest for successful development practices. Not offered 2002-03.

251 Oceanography (4). * F, alternate years. This survey course includes: The history of marine exploration; the nature of the ocean floor, including submarine volcanoes, oceanic crust, sea-floor spreading, and marine sediments; coastal geomorphic processes; the properties of seawater; the nature of tides and currents; ecological marine biogeography, including marine plankton, deep-water biota, coral reef communities; and stewardship of marine resources. Laboratory. Also listed as Geology 251. Prerequisite: Sophomore status. Not offered 2002-03.

310 Urban Geography (4). * S, alternate years. A study of the special organization of cities and systems of cities. Both the internal structure and external relations of cities receive attention. The historic and present-day spatial organization of infrastructure, economic life, social activities, ethnicity, institutions, and politics are examined. Prerequisite: Geography 110 or one social science course. Not offered 2002-03.

311 Geomorphology (4). * F The investigation of landforms and the processes which cause them. This course studies the erosional and depositional features resulting from rivers, glaciers, and wind, as well as coastal, gravitational, and weathering processes. Landforms are described and classified from field observations, topographic maps, and aerial photographs. Explanations of the landforms are offered through quantitative modeling of the processes. Laboratory, field trips. Also listed as Geology 311. Prerequisite: Geology 151 or Geology/Geography 120. *D. van Dijk.*

320 Introduction to Cultural Geography (3). * F, alternate years. An examination of the interactions between culture and nature in pre-agricultural, agricultural, and urban-industrial societies. The course explores the origins, character, content, organization, perceptions, and meanings of cultural landscapes, past and present, large and small. Prerequisite: Geography 110 or permission of the instructor. *H. Aay.*

321 Glacial Geomorphology and Climatic Change (4). * S, alternate years. Study of the effects of ice sheets and colder climates of past ice ages upon the earth's surface. In this course glaciology (accumulation and flow of glaciers) and glacial geology (landforms due to glaciation) are studied, emphasizing the glacial stratigraphy of Michigan. An overview of deposits of Quaternary age throughout the world gives additional evidence for and understanding of previous ice ages. Theories of climatic change, as well as man's effect upon and response to climatic change, are also discussed. Laboratory and field trips. Also listed as Geology 321. Prerequisite: Geography 311. Not offered 2002-03.

351 Introduction to Urban and Regional Planning (3). * F, alternate years. A survey of the practice of urban and regional planning including its theory, history, techniques, issues, and careers. Land use planning and zoning, housing and community development, environmental planning, recreation planning, health care systems planning, transportation planning, historic preservation and urban design, and other subfields are examined within neighborhood, downtown, suburban, regional, and Third World contexts. Prerequisites: Two 200-300 level social science and/or geography courses or department approval. *T. Tilma.*

380 Seminar in the History and Philosophy of Geography (3). S, alternate years. This course includes a study of significant episodes and crucial issues in the history and philosophy of geography with an emphasis on present-day human geography. The philosophical underpinnings of geography's domains and paradigms are critically examined. This seminar requires geography majors to reflect on integrating their geographical knowledge and fitting this into a Reformed worldview. Prerequisite: Junior or senior standing in the geography program. *H. Aay.*

385 Internship in Geography (3). F, S, or SS. This course is an internship involving professional application of the concepts and principles learned as part of the geography program. A student is placed in a government agency, a private firm, or a not-for-profit organization, which builds on previous instruction in the program in an area of applied geogra-

phy, such as urban and regional planning, mapping, and geographic information systems. Students are assigned a specific project and work under the direct supervision of an employee of the outside agency or firm as well as under the supervision of the instructor. Prerequisites: Senior standing in the geography major or permission of the instructor. *H. Aay.*

390 Independent Study. * F, I, and S. Prerequisite: Permission of the department. *Staff.*

395 Research in Geography (2). F, I, and S. Field or library research on an approved geographical problem and presentation of the results of this research in a seminar. Open to qualified students by permission of the department. *Staff.*

Geology

120 Earth Systems (4). F and S. This course includes an introductory study of physical systems and historical processes that shape the surface of Earth. Topics include: 1) The physical nature of Earth's surface based on composition of Earth materials and the forces that create landforms, 2) weather and climatic systems and their effect on the global distribution of soils and ecological communities, and 3) the oceans. Understanding of Earth systems is applied to concepts of stewardship, resource use, and energy consumption. Laboratory. Also listed as Geography 120. *D. van Dijk.*

151 Introduction to Geology (4). F and S. This course is a study of the materials and processes of Earth leading to a responsible Christian appreciation for and stewardship of Earth. Topics include minerals and rocks, Earth's interior and surface structure; surface processes producing landforms; geological time and principles for interpreting Earth history; mineral resources and fossil fuels; and geological hazards such as earthquakes, volcanoes, floods, landslides, and groundwater pollution. Laboratory. *R. Stearley, G. Van Kooten.*

152 Historical Geology (4). S. The first portion of this course traces the development of the study of Earth through the past few centuries, as geology became a true scientific discipline and as its practitioners became convinced of Earth's antiquity. Attention is given to relating views of Earth's history to the Gen-

esis record. During the remainder of the course, evidence for the particulars of earth history, with emphasis on North America, is outlined. Topics include the origin of the Earth and its moon; the origin of continents and ocean basins; rock deformation caused by plate motion and the creation of mountain ranges through history; and sedimentary deposits of intracontinental seas. The laboratory builds on rock classification and map techniques introduced in Geology 151. Prerequisite: Geology 151 or equivalent. *R. Stearley.*

201 Mineralogy (4). * F A study of the principles of crystal structure in minerals with emphasis on the silicates. Modes of geologic occurrence of minerals are reviewed. Crystal morphology and mineral identification are emphasized in laboratory. Laboratory. Prerequisites: Geology 151 and Chemistry 103. *D. Young.*

202 Optical Mineralogy (2). * S, alternate years. This course treats the theory of polarized light transmission in minerals and the use of the polarizing microscope in the identification of minerals and determination of their optical properties. Laboratory. Not offered 2002-03.

212 Structural Geology (4). * S, alternate years. An analysis of common geological structures such as folds, faults, joints, and foliations; inquiry into the means by which these structures are formed from stresses within the Earth; methods of constructing and interpreting geological maps and cross sections; and introduction to field-mapping techniques. Laboratory, field trip. Prerequisite: Completion of or concurrent registration in Geology 152. *G. Van Kooten.*

251 Oceanography (4). * F, alternate years. This survey course includes: The history of marine exploration; the nature of the ocean floor, including submarine volcanoes, oceanic crust, sea-floor spreading, and marine sediments; coastal geomorphic processes; the properties of seawater; the nature of tides and currents; ecological marine biogeography, including marine plankton, deep-water biota, coral reef communities, and estuarine and intertidal marine communities; and stewardship of marine resources. Laboratory. Also listed as Geography 251. Prerequisite: Sophomore status. Not offered 2002-03.

301 Igneous and Metamorphic Petrology (4). * F, alternate years. An investigation of the mineralogy, chemistry, structure, texture, field associations, tectonic setting, and genesis of igneous and metamorphic rocks. The petrographic microscope is used extensively in the description and genetic interpretation of rocks. Laboratory. Prerequisite: Geology 202. Not offered 2002-03.

302 Sedimentary Petrology and Depositional Environments (4). * F, alternate years. The study of sedimentary rocks, their classification and origins. Lecture emphasizes the physical, chemical, and biologic processes responsible for the origin, deposition, and diagenesis of sediments, with particular attention to modern depositional analogs. Laboratory emphasizes identification of sedimentary rocks on outcrop, hand specimen, and thin section. Laboratory, two required field trips. Prerequisites: Geology 152 and Chemistry 103. *R. Stearley.*

304 Geochemistry (3). * F, alternate years. The origins and history of the solar system, Earth, crust and mantle, and various rock types in light of the distribution of the chemical elements and of stable and radioactive isotopes. Low-temperature aqueous geochemistry is also discussed. Prerequisites: Geology 201 or 151 plus Chemistry 104 or permission of the instructor. Not offered 2002-03.

311 Geomorphology (4). * F. The investigation of landforms and the processes which cause them. This course studies the erosional and depositional features resulting from rivers, glaciers, and wind, as well as coastal, gravitational, and weathering processes. Landforms are described and classified from field observations, topographic maps, and aerial photographs. Explanations of the landforms are offered through quantitative modeling of the processes. Laboratory, field trips. Also listed as Geography 311. Prerequisites: Geography/Geology 120 and Geology 151. *D. van Dijk.*

312 Environmental Geology (4). * S, alternate years. Use of geologic methods and interpretations in understanding and resolving problems related to the environment. Emphasis is on hydrology (groundwater and surface water), coastal zone problems, soil erosion, landslides, and restoration of disturbed geo-

logic regions. Laboratory. Prerequisite: Geology 311. *T. Timmermans.*

313 Paleontology (4). * S, alternate years. A study of organisms that once lived on Earth. Includes an examination of the processes of preservation and methods of discovering the structure, habitat, and relationships of those organisms, and a review of their distribution and life history. A broad spectrum of organisms is studied with emphasis on invertebrate animals. Laboratory, field trip. Also listed as Biology 313. Prerequisite: Geology 152 or Biology 242 and 243. Not offered 2002-03.

314 Stratigraphy (4). * S, alternate years. Fundamental principles of stratigraphic nomenclature and interpretation are illustrated through intensive study of sedimentary basins, including the Michigan Basin, basins of the Southwest United States, and the Central Appalachian Basin. Emphasis on applying the interpretation of sedimentary facies to historical sequences. Applications to petroleum exploration. Laboratory, required field trip. Prerequisites: Geology 152 and 302. *R. Stearley.*

316S Field Geology (3). SS. Introductory field geology. Offered as a summer course at AuSable Trails Institute of Environmental Studies located near Mancelona, Michigan.

321 Glacial Geomorphology and Climatic Change (4). * S, alternate years. Study of the effects of ice sheets and colder climates of past ice ages upon Earth's surface. In this course glaciology (accumulation and flow of glaciers) and glacial geology (landforms due to glaciation) are studied, emphasizing the glacial stratigraphy of Michigan. An overview of deposits of Quaternary age throughout the world gives additional evidence for and understanding of previous ice ages. Theories of climatic change, as well as man's effect upon and response to climatic change, are also discussed. Laboratory and field trips. Also listed as Geography 321. Prerequisite: Geology 311. Not offered 2002-03.

331 Geophysics (4). * F, alternate years. An overview of physical methods used for determining properties of Earth's interior (solid earth geophysics) and for discovering economically important resources in Earth's crust (exploration geophysics). Topics in solid earth geophysics: Heat flow and Earth's temperature distribution; gravity and the density geo-

file and shape of Earth; magnetism of Earth and paleomagnetism; anelastic properties and viscosity of Earth; and earthquake prediction. Topics in exploration geophysics: Reflection and refraction seismology, gravimetry, resistivity, and well-logging techniques. Laboratory. Prerequisites: Geology 151, Physics 124 and 126, Mathematics 162, or consent of the instructor. Not offered 2002-03.

359 Seminar in Secondary Geology-Earth Science (3). S. A course in perspectives on, principles of, and practices in the teaching of Geology-Earth Science on the secondary level. This course should be taken concurrently with Education 346. The seminar provides a forum for the discussion of concerns that develop during directed teaching. This course is part of the professional educational program and may not be included in the major or minor in Geology-Earth Science. *Staff*.

385 Advanced Topics in Geology (2). F. The application of knowledge from the various geological disciplines to the detailed investigation of a topic of current importance in geology. Lectures, discussions, and student presentations. Prerequisite: Senior status in the major concentration in geology or permission of the instructor. *D. Young*.

386 Seminar in Geology (2). S. A survey of the historical development of geology as a science and an examination of the principles and practice of geology from a Reformed perspective. Prerequisite: Senior status in the major

concentration in geology or permission of the instructor. *D. Young*.

390 Independent Study. * F, I, and S. Prerequisite: Permission of the department. *Staff*.

395-396 Research in Geology (2-4). * F, I, and S. Field and/or laboratory research on an approved geological problem and presentation of the results of the research in seminar. Open to qualified students by permission of the geology staff. *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 Earth and its human inhabitants. Topics include applications of geology to environmental problems, contribution of space research to understanding 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: Geology 120 or permission of the department. Not offered 2002-03.

590 Independent Study. * F, I, and S. *Staff*.

German

Professor B. Carvill (chair)

Assistant Professors H. De Vries, D. Smith

Research Associate P. Dykstra-Pruim

Programs for students wishing to major in German are worked out for them individually by departmental advisors who should be consulted early. Calvin-sponsored programs are available in Germany and Austria for the interim, a semester, the academic year, or the summer. Students interested in such programs should work out the details with the department chair, the director of Off-Campus Programs, and the registrar.

GERMAN MAJOR

261)

German 215

German 216

German 315

Two 300-level literature courses

Five electives numbered 123 or higher (except 261), one of which may be the German Interim Abroad (30-32 semester hours)

GERMAN MINOR

German 215

Five courses from German 123 or higher (except 261), one of which may be the German Interim Abroad (20-22 semester hours)

To be eligible for the major or minor program, a student must have completed at least two courses in German with a minimum grade of "C" (2.0) and must have completed German 102, 122, or the equivalent.

GERMAN ELEMENTARY AND SECONDARY EDUCATION MAJOR

German 201

German 202

German 215

German 216

Two 300-level literature courses

German 315

Three approved electives (excluding German 261)

German 356 or 357

GERMAN ELEMENTARY AND SECONDARY EDUCATION MINOR

German 201

German 202

German 215

German 216

German 356 or 357

Two approved electives (excluding German

Students in teacher education (secondary majors and minors and elementary minors) must pass the test administered by the State of Michigan. They must also pass a departmental German proficiency examination prior to the teaching internship. This examination is offered twice each school year, during October and March; for details see B. Carvill. Additional criteria for approval for the teacher education program are found in the *Teacher Education Program Guidebook*, available in the Education Department.

COURSES

101 **Elementary German** (4). F. An introductory course in the comprehension and use of spoken and written German as well as an exposure to the people and cultures of the German speaking countries. *D. Smith.*

102 **Elementary German** (4). S. Continuation of German 101. *Staff.*

121/122/123 **Introductory and Intermediate German** (4,3,4). F, I, and 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 German 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. *D. Smith, Staff.*

201 **Intermediate German** (4). F. Further development of skills in speaking, listening, and reading, and writing German. Includes systematic grammar review, Landeskunde, and introduction to reading a variety of short literary texts. Prerequisite: German 102 or four units (two years) of high school German. *D. Smith.*

202 **Intermediate German** (4). S. Continuation of German 201. Prerequisite: German 201. *D. Smith.*

215 **Advanced Conversation** (3). F. This course is designed to develop advanced speaking and oral comprehension skills and prepares students culturally for a visit to or a stay in a German-speaking country. Prerequisite: German 123 or 202. *B. Carvill.*

216 **Advanced Oral and Written Composition** (3). S. A review of selected chapters of German grammar and extended practice in oral and written communication. Prerequisite: German 215 or permission of the instructor. *B. Carvill.*

315 **Advanced Grammar and Stylistics** (3). F. This course integrates the study of German *Landeskunde* with continued practice in selected areas of German grammar, vocabulary, and idiomatic usage. Students will further refine their skills in written and oral communication. Prerequisite: German 216 or permission of the instructor. *B. Carvill.*

Literature

217 **Readings in Major German Authors** (3). F. This course is a basic introduction to German literature and covers selected readings in major German authors from 1750 to 1850. Prerequisite: German 123 or 202. *H. De Vries, B. Carvill.*

218 **Readings in Major German Authors** (3). F. This course covers selected readings in major German authors from 1850 to the present. Prerequisite: German 123 or 202. *H. De Vries.*

250 **German Civilization** (3). F. 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: German 123 or 202. Not offered 2002-03.

301 **Classicism** (3). * S. A study of the origins, nature, and literary manifestations of the classical ideal in eighteenth-century Germany. Readings from Lessing, Goethe, and Schiller. Prerequisite: German 217, 218, or permission of the instructor. Not offered 2002-03. *Staff.*

303 **Romanticism** (3). F, even years. The literary theory and philosophical-religious ba-

sis of the German romantic movement as reflected in representative works of both earlier and later Romanticists. Prerequisite: German 217, 218, or permission of the instructor. *H. De Vries.*

304 **Nineteenth Century Literature** (3). * S, even years. Readings in German, Swiss, and Austrian prose and poetry of the nineteenth century. A survey of the intellectual and cultural changes in this era and an analysis of literary works characteristic of the period. Prerequisite: German 217, 218, or permission of the instructor. *B. Carvill.*

307 **Twentieth-Century German Literature I** (3). * F, odd years. Selected readings in German literature from 1890 to 1945, with special emphasis on the works of Th. Mann, Kafka, Hesse, and Brecht. Lectures, discussions, and assigned papers. Prerequisite: German 217, 218, or permission of the instructor. *B. Carvill.*

308 **Twentieth-Century German Literature II** (3). * S, odd years. Readings in German literature from 1945 to the present from such writers as W. Borchert, Frisch, B+11, and M. Walser. Lectures, discussions, and assigned papers. Prerequisite: German 217, 218, or permission of the instructor. *D. Smith.*

356 **Foreign Language Education in the Elementary School** (3). * I. Theory and practice of foreign language teaching in the elementary school. Study of language skill development, second language acquisition, methodologies, curricula and programs. Off-campus school visits for observation and aiding experience. To be taken prior to Education 346 and Spanish 359. Required for elementary and K-12 endorsement. *M. Pyper.*

357 **Introduction to Foreign Language Pedagogy** (3). F. An introduction to the major principles and practices of foreign language pedagogy, offering a study of various methodologies and the major controversies associated with them. The course explores how a Christian approach to education affects foreign language pedagogy and how foreign language pedagogy interacts with the language learner's personal growth. It also introduces the prospective educator to the teaching of the basic skills, to issues in evaluation and assessment, and the use of technologies in the foreign language classroom. This course should be taken

in the junior or senior year, prior to student teaching. Required for secondary certification. Prerequisite: Completion of or concurrent registration with Education 301/303. *D. Smith.*

359 Seminar in Secondary Foreign Language Pedagogy (3). S. A seminar reinforcing the major principles and practices of foreign language pedagogy on the secondary level for students during their semester of directed teaching. The course will provide an opportunity for collaborative work on putting theoretical and pedagogical matters of immediate concern into a practical framework. This course is required concurrently with Education 346. This course does not count as part of the major or minor program. Prerequisites: Education 301/303 and successful completion of the department proficiency exam. *M. Pyper.*

390 Independent Study. F, I, and S. Prerequisite: Approval of the department chair. *Staff.*

395 Seminar (3).

Civilization

261 Introduction to Modern German Culture (3). S. A survey of the German cultural tradition of this century as it finds expression in the various arts, with particular emphasis on films and representative works of literature in translation. Open to all students, but planned primarily for those in designated pre-professional courses whose programs include the "foreign culture" option. No knowledge of German is required. Not offered 2002-03.

Greek

See the department of classical languages for a description of courses and programs of concentration in Greek.

Health, Physical Education, Recreation, Dance, and Sport

Professors D. Bakker, D. DeGraaf, K. Gall, N. Meyer, J. Timmer, G. Van Andel (chair), M. Zuidema,

Associate Professor J. Kim

Assistant Professor J. Bergsma, J. Pettinga, K. Vande Streek, E. Van't Hof, J. Walton, A.

Warners

Instructor M. Roskamp

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, exercise scientists, and recreation leaders; and it directs an extensive program of intramural, recreational, and inter-collegiate sports for men and women.

PHYSICAL EDUCATION MAJOR*

Physical Education 201

Physical Education 212

Physical Education 213

Physical Education 220

Physical Education 301

Health 307 or 265/266

Physical Education 325

Physical Education 332

Two electives from the 200-level or above

Required Cognate

Biology 115

*Note that these are basic courses required of all physical education majors, except education.

PHYSICAL EDUCATION MINOR

Physical Education 201

Physical Education 325

Physical Education 220

A minimum of 7-10 additional hours in at least three (3) of the following courses:
Physical Education 212, 213, 215, 230-239, 301, 315, 332, 380, or one approved Physical Education interim

EXERCISE SCIENCE

Physical education major courses plus the Exercise Science cognate

Cognates

Biology 141

Biology 205/206

Chemistry 115

Physics 223

Mathematics 143

Two electives from the 200 level or above, one of which must be Health 254

Exercise science program majors are asked to consult N. Meyer, J. Timmer, or J. Walton.

K-12 TEACHER EDUCATION PHYSICAL EDUCATION MAJOR

Physical Education 156

Physical Education 201

Physical Education 204

Physical Education 212

Physical Education 213

Physical Education 215

Physical Education 220

Physical Education 280

Physical Education 281

Physical Education 301

Physical Education 305 *

Physical Education 306

Physical Education 325

Physical Education 332

Physical Education 359

Physical Education 380

Required Cognate

Biology 115

* Physical Education 305 and 306 are required for K-12 endorsement, but Physical Education 305 is dropped as a requirement for secondary certification and Physical Edu-

cation 306 is dropped as a requirement for elementary certification.

SECONDARY EDUCATION

PHYSICAL EDUCATION MINOR

Physical Education 204

Physical Education 212

Physical Education 220

Physical Education 280

Physical Education 281

Physical Education 301

Physical Education 306

Physical Education 325

Physical Education 332

Physical Education 380

ELEMENTARY EDUCATION

Physical education MINOR

Physical Education 156

Physical Education 201

Physical Education 204

Physical Education 212

Physical Education 220

Physical Education 280

Physical Education 281

Physical Education 301

Physical Education 305

Physical Education 325

Physical Education 332

Physical Education 380

HEALTH EDUCATION MINOR:

ELEMENTARY/SECONDARY

Health 202

Health 203

Health 254

Health 265

Health 266

Physical Education 301

Health 307

Health 308

Please note many courses in the health education minor are offered alternate years, so this minor takes careful planning.

The education programs require the approval of the Education Department and the approval of one of the department advisors, M. Zuidema or K. Gall. D. Bakker serves as the Advisor for Health Education. Prior to the teaching internship, students must have the approval of the department. Criteria for approval are found in the Teacher Education Program Guidebook, available in the Education Department.

Recreation (B.S.R.)

The professional program in Recreation includes three emphasis areas: Therapeutic recreation (recreation therapy), youth leadership/development, and community recreation. Recreation majors complete a modified liberal arts core, seven major courses (Recreation 201, 203, 304, 305, 310, 380, and 346), four cognate courses (Social Work 350 or Psychology 201 or 207, Sociology 310 or Psychology 310, and Physical Education 220 and either Physical Education 221 or 222). Each major will also select an emphasis area from one of the following options: Therapeutic Recreation (Mathematics 143 or Psychology 255 or Sociology 255, Psychology 212, Social Work 370, and Recreation 205, 314, and 324); Youth Leadership (CAS 140, Physical Education 301, Psychology 222, and Recreation 215, 308, and 312); or Community Recreation (Environmental Studies 201, Physical Education 301, Political Science 202, and Recreation 215, 308, and 312). Students are advised to consult with G. Van Andel (Therapeutic Recreation emphasis) or D. DeGraaf (Youth Leadership and Community Recreation emphasis) of the HPERDS Department for more information about this program and possible career opportunities in the broad field of recreation and youth services.

| <i>First year</i> | <i>Semester hours</i> |
|---|-----------------------|
| History core | 4 |
| Religion core | 3 |
| Mathematics core (except Therapeutic Recreation option) | 3 or 4 |
| Physical world core | 4 |
| Biology 115 | 4 |
| Sociology 151 | 3 |
| Psychology 151 | 3 |
| English 101 and Interdisciplinary 110 | 4 |
| Developing a Christian Mind Interim | 3 |
| Physical education core | 1 |
| <i>Second year</i> | <i>Semester hours</i> |
| Literature core | 3 |
| Religion core | 3 |
| Communication 240 | 3 |
| Recreation 201 | 3 |
| Recreation 215 or 205, depending on emphasis | 3 |
| Emphasis courses | 3 or 4 |
| Psychology 201 or Social Work 350 | 3 |
| Recreation 380 (sign up with advisor) | 2 |
| Physical Education 221 or 222 | 2 |
| Interim elective | 3 |
| Physical education core | 1 |
| <i>Third year</i> | <i>Semester hours</i> |
| Philosophy 153 | 3 |
| Global/historical studies core | 3 |
| Arts core | 3 |
| Recreation 203 | 3 |
| Recreation 304 | 3 |
| Recreation 305 | 3 |
| Physical Education 220 | 3 |
| Psychology/Sociology 310 | 3 |
| Emphasis courses | 3 or 4 |

| | |
|---|-----------------------|
| Physical Education core | 1 |
| Interim elective | 3 |
| Physical Education/Recreation 301 or Psychology/Sociology 255, depending on emphasis | 3 or 4 |
| <i>Fourth year</i> | <i>Semester hours</i> |
| Recreation 310 | 3 |
| Theology 301 | 3 |
| Emphasis courses | 6–8 |
| Interim elective | 3 |
| Recreation 346 (to be taken after all major course work is completed) | 12 |

RECREATION MAJOR

Physical Education/Recreation 201
Recreation 203
Recreation 304
Recreation 305
Recreation 310
Recreation 346
Recreation 380

Cognates

Social Work 350 or Psychology 201 or 207
(depending on emphasis)
Psychology or Sociology 310
Physical Education 220
Physical Education 221 or 222

The professional program also includes three different emphasis areas from which students must choose at least one specialty area: Therapeutic Recreation, Youth Leadership, or Community Recreation. Within each emphasis area, the following courses are required:

THERAPEUTIC RECREATION

Mathematics 143 or Psychology 255 or
Sociology 255
Psychology 212
Recreation 205
Recreation 314
Recreation 324
Social Work 370

YOUTH LEADERSHIP

CAS 140
Physical Education 301
Psychology 222
Recreation 215
Recreation 308
Recreation 312

COMMUNITY RECREATION

Environmental Studies 201

Physical Education 301
Political Science 202
Recreation 215
Recreation 308
Recreation 312

RECREATION MINOR

Recreation 201
Recreation 305
Recreation 310
Three approved courses, one of which may
be a recreation interim

Students are advised to consult with G. Van Andel (Therapeutic Recreation emphasis) or D. DeGraaf (Youth Leadership and Community Recreation emphasis) for more information about this program and possible career opportunities in the broad field of recreation and youth services.

DANCE MINOR

Physical Education/Recreation 156
Physical Education 202
Physical Education 310
Physical Education 330
Physical Education 212

Five additional courses from the following:
At least one semester hour in each of three
of these five styles (at either level I or
II): *Modern, ballet, jazz, tap, or sacred
dance* (Physical Education/Recreation
151, 161, 152, 162, 153, 163, 154, 155,
165)

At least one semester hour at level II in one
of the five styles listed above (Physical
Education/Recreation 161, 162, 163,
165)

At least one elective dance technique course

Please note many courses in the dance minor are offered alternate years, so this minor takes careful planning. Dance minors are asked to consult with E. Van't Hof.

Physical Education core requirements in Skill Enhancement and Leisure/Lifetime are satisfied through the dance minor. Students would need an additional Personal Fitness/Fitness core course to complete Physical Education core.

Core Requirements

The liberal arts core requirement in physical education is met by the following courses: one course from those numbered 101–129 or 222 (Personal Fitness Courses); One course from 130-159 or 221 (Leisure and Lifetime); and one course from 160-189 (Skill Enhancement). Students may take two semester hours in addition to the core requirements, which may be applied to the minimum graduation requirements.

COURSES

100-129 **Health Fitness Courses** (1). F and S. A course in this area is designed to provide students with the basic knowledge and activity requirements to maintain active lives. This course is to be used as a gateway course before students complete their two requirements in the Skill Enhancement core category. (Students take one course from this series, then one course each from the skill enhancement series and from the leisure and lifetime series). The emphasis in each course is on fitness development and maintenance. Elementary education students take Physical Education 222 for their health fitness course. Conceptual topics related to wellness included in all courses are: 1) Lifestyle commitment and Christian responsibility concerning health behaviors, 2) issues in nutrition, 3) weight management decisions, 4) addictive behaviors, and 5) principles for development of a personal active lifestyle.

- 101 Jogging
- 102 Walking
- 103 Cycling
- 105 Aerobic Dance
- 106 Aerobic Exercise
- 107 Weight Training
- 108 Lap Swimming
- 109 In-Line Skating
- 222 Elementary Health Education Activities (2)

130-159 **Leisure and Lifetime Courses** (1). F, I, and S. A course in this area is designed to provide students with the basic knowledge to acquire and develop selected motor skills for a lifetime of leisure. This course is an extension of the gateway Personal Fitness course previously taken by the student. Each course emphasizes both personal development in a specific activity and acquisition of basic skills needed for a lifetime of activity. All courses include the following conceptual topics: 1) Skill building, 2) Reformed perspective of leisure, 3) Christian stewardship, and 4) stress management. Prerequisite: One course from the Personal Fitness core section number Physical Education 100-129. Elementary education majors may take Physical Education 222 as a prerequisite.

- 131 Badminton I
- 132 Golf I
- 133 Tennis I
- 134 Racquetball I
- 135 Volleyball I
- 136 Touch Football
- 137 Bowling
- 138 Outdoor Activities
- 139 New Games
- 140 Swimming I
- 141 Slo-Pitch Softball
- 142 Rock Climbing
- 143 Canoeing
- 144 Frisbee
- 151 Tap Dance I
- 152 Jazz Dance I
- 153 Modern Dance I
- 154 Sacred Dance I
- 155 Ballet Dance I
- 156 Creative Dance
- 157 Rhythm in Dance
- 158 Social Dance

160-189 **Skill Enhancement Courses** (1). F, I, and S. A course in this area is designed to provide students with advanced knowledge and activity requirements to develop and refine selected motor skills. The course is an extension of the gateway Personal Fitness course previously taken by students. The emphasis in each course is on motor skill enhancement in specific activities. Elementary education students take Physical Education 221 for the remainder of their Human Movement Skills core requirement. Conceptual topics included in all courses are: 1) Skill

enhancement, 2) Reformed perspective of skilled movement, 3) psychological issues, and 4) from the Personal Fitness core section number Physical Education 100-129. Elementary education majors take Physical Education 222 as their prerequisite. Students enrolling in courses labeled “II” must have one of the following prerequisites: Completion of a level 1 course, high school competitive experience, or permission of the instructor.

- 161 Tap Dance II
- 162 Jazz Dance II
- 163 Modern Dance II
- 165 Ballet Dance II
- 166 Square/Folk Dance
- 167 Period Styles of Dance
- 168 Visual Design in Dance
- 170 Swim II
- 171 Karate
- 172 Self Defense
- 173 Basketball
- 175 Volleyball II
- 176 Ice Skating
- 177 Downhill Skiing
- 178 Cross-Country Skiing
- 181 Badminton II
- 182 Golf II
- 183 Tennis II
- 184 Archery
- 185 Soccer
- 186 Gymnastics
- 187 Fencing
- 221 Elementary Physical Education Activities (2)

190-199 **Elective Courses.** F, I, and S. The courses listed in this series are offered to attempt to meet the special needs of students. Students may select a course from this group based on interest or academic program. These courses will count toward the total graduation requirement, but will not count as core courses.

- 191 Lifeguard Training (2 semester hours)
- 192 Water Safety Instructor (2 semester hours)
- 193 Sports Officiating (2 semester hours)
- 198 Scuba Instruction (1 semester hour)
- 199 Independent Activity (1 semester hour)

201 **Historical and Sociological Foundations of Physical Education, Recreation, and Sport** (3). F and S. A study of physical education, recreation, and sport in the context of their

history and development as well as an overview of their role in, and significance to, contemporary society. *J. Timmer, D. DeGraaf.*

202 **Dance in Western History** (3). S. A historical and analytical study of the development of western dance from early lineage-based societies in Europe to contemporary forms in European and North American cultures. Emphasis is placed upon the development of dance as a performing art. The course investigates parallel trends in the arts of music, visual art, drama, and dance throughout western history. *E. Van't Hof.*

204 **Curricular and Instructional Principles for Teaching Physical Education** (2). S. An overview of curricular concepts, planning principles and management skills necessary for effective teaching and learning in physical education. This course is designed to give prospective teachers insights into the nature of physical education and effective instructional strategies. The course involves discussions, written assignments, research readings, observations, task teaching, and assessment applications. Prerequisite: Physical Education 201. *M. Zuidema, K. Gall.*

212 **Anatomical Kinesiology** (3). F. A study of human motion based on structural foundations. Particular attention is given to bone, joint, muscle, connective and nerve structures, and the movement patterns specific to these structures. An analysis of efficient anatomical movement patterns for loco-motor, manipulative, and sport skills are studied in the course. Prerequisite: Biology 115, 141, 205, or permission of the instructor. *N. Meyer.*

213 **Kinesiology** (3). A study of human movement based on the body's anatomical structure and mechanical function. Includes a review of anatomical movement patterns with in-depth kinematic and kinetic analysis of loco-motor, manipulative, and sport skills. Students determine patterns of efficient movement for various sports skills based on physical and mechanical principles of human movement. *N. Meyer.*

215 **Physical Education for Persons with Special Needs** (3). S. Philosophy and basic concepts relating to planning and conducting programs in educational and community settings for individuals with disabilities. Concepts and

techniques in program planning, leadership, and adaptations of facilities, activities, equipment in physical education and recreation services for individuals with special needs are reviewed and discussed. *J. Timmer*

220 Motor Learning and Skill Performance (3). * F This course explores how humans acquire movement skills. It 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. The course gives opportunities for practical experience in applying motor learning principles. *M. Zuidema*.

221 Elementary School Activities and Programs (2). * F and S. The course provides a working knowledge of the fundamentals of physical education planning for elementary school children. It substitutes for one course in the Skill Enhancement (Physical Education 160-189) category of the Health and Fitness core requirement. This course is required of all elementary education students. *M. Zuidema, K. Gall, K. Vande Streek*.

222 Elementary School Health Education Program and Activities (2). * F and S. This course provides a working knowledge of the fundamentals of health education planning for elementary school students. Particular attention is given to curriculum sequence, resource materials, and learning activities. The course is required of all elementary education students. It can substitute for a Health Fitness (Physical Education 100-129) subcategory of the Health and Fitness core requirement. *D. Bakker, A. Warners, K. Vande Streek*.

230-289 The Coaching of Sports (2). Students with an interest in coaching are encouraged to elect courses in this series. Prerequisite: A record of participation in skill performance or completion of the same activity in Physical Education 380.

230 Field Hockey. F. Not offered 2002-03.

231 Basketball. F. *K. Vande Streek*.

232 Baseball/Softball. S. *J. Pettinga*.

233 Track and Field. S. Not offered 2002-03.

234 Soccer. F. Not offered 2002-03.

235 Volleyball. F.

236 Football. F. Not offered 2002-03.

238 Wrestling. F. Not offered 2002-03.

239 Racquet Sports. S. Not offered 2002-03.

255 Basic Athletic Training (3). S. The course covers physiological principles as they apply to physical conditioning and rehabilitation from injuries. Specific types of conditioning programs and general first aid techniques are studied. Laboratory topics include taping techniques. Prerequisite: Biology 141 or equivalent. *Staff*.

280 Team Sports Assessment (1). F. This course promotes the development and assessment of skills and knowledge for basketball, floor hockey, soccer, softball/baseball, touch football, track and field, and volleyball. *J. Pettinga*.

281 Individual/Dual Sports Assessment (1). S. This course promotes the development and assessment of skills and knowledge for badminton, bowling, golf, racquetball, swimming, tennis, tumbling, and weight training. *J. Pettinga*.

301 Measurement and Evaluation in Health, Physical Education, and Recreation (3). S. A study of evaluation principles and techniques in Health, Physical Education, and Recreation. Topics covered include criteria for selecting tests; descriptive, inferential, and predictive statistical techniques and their application; and tools for assessing health fitness, fundamental skills, sport skills, cognitive skills, and psychological attitudes. The course includes a laboratory section appropriate to the student's major. Lab A, required for all teacher education students, addresses K-12 fitness and skill assessments; Lab B, designed for recreation majors, assists students in applying program and leadership assessments. *M. Zuidema*.

305 Instructional Methods for Elementary Physical Education (3). F. A study of basic knowledge, skills, and strategies involved in the various educational activities appropriate for elementary school physical education programs. This course focuses on methods and resources for the elementary school curricula. Course includes lectures, discussions, demonstrations, laboratory teachings, student presentations, and resource material compi-

lations. Prerequisites: Physical Education 204 and 220. *E. Van't Hof, M. Zuidema, K. Gall.*

306 Instructional Methods for Secondary Physical Education (3). S. This course focuses on methods and resource materials appropriate for secondary school physical education programs. Coverage includes team sports, individual and dual sports, fitness building activities, recreational sports activities, and adaptive activities. The course includes lectures, discussions, demonstrations, laboratory teachings, student presentations, and compilation of resource materials. Prerequisites: Physical Education 204 and 220. *K. Gall.*

310 Dance in World Culture (3). F A study of the relationship of dance to issues of contemporary culture: The role and power of dance to define and reflect community, societal, and religious values and the role of dance within the arts of diverse cultures. An investigation of the dance traditions of many cultures through video, readings, dancing, lecture, discussion, and writing. The course is designed to broaden students' cross-cultural understanding through the art of dance. Not offered 2002-03. *E. Van't Hof.*

315 Sociology of Sport (3). 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, observers, and the relationship of sport as an institution to the rest of the social structure. Offered as Sociology 315. *J. Timmer.*

325 Physiology of Physical Activity (3). * S. A study of physical efficiency and physiological principles involved in human exercise. Emphasis will be placed on the responses of the respiratory, cardiovascular, and muscular systems. The course includes the physiology of factors affecting performance such as the environment and the use of tobacco, alcohol, and drugs. Prerequisite: Biology 115, 141, or permission of the instructor. *J. Walton.*

330 Dance Composition and Performance (3). S. An intensive engagement with the art of choreography. Students explore the concepts of body, space, rhythm, choreographic forms, meaning, and group design. Students create movement studies through improvisa-

tion. They develop analysis and evaluation skills through observation, reflection, discussion, and written critiques that prepare them to design and evaluate dance. Students choreograph a final dance and perform it for an audience. They present the process and the application to their lives as Christians through writing and oral presentation. Prerequisite: Physical Education 156 or permission of the instructor. Not offered 2002-03. *E. Van't Hof.*

332 Philosophy of Physical Education and Sport (3). * F Core capstone course. This course provides students with a survey of philosophical inquiry about sport and physical education. Topics include the nature of play and sport, sport as meaningful experiences, ethics in sport and physical activity, and contemporary issues such as drugs, violence, and gender. Throughout the course, students are confronted with issues from a Christian and Reformed perspective in order to develop their own Christian perspectives. Prerequisites: Biblical Foundations I or Theological Foundations I, Developing a Christian Mind, and Philosophical Foundations. *J. Timmer.*

359 Seminar in Principles and Practices of Physical Education Teaching (3). F and S. The seminar deals with perspectives and methods of teaching physical education. This course should be taken concurrently with Education 346 and will provide a forum for discussion of problems and issues that develop during student teaching. Before taking this course, students must be admitted into Directed Teaching by the Education and HPERDS Departments. Students must complete the physical education major prior to student teaching. Fifth year and transfer students with special needs may seek department authorization to do directed teaching during the first semester. *M. Zuidema, K. Gall.*

380 Individual Competences (1). F and S. This course assists students in the development of a portfolio documenting essential skills and experiences needed to prepare them for professional practice in the disciplines of health, physical education, recreation, and dance. Students will document their skill competence in a variety of fitness, movement/dance and sport activities, as well as document proficiency in teaching, administrative, and professional competencies.

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

391 Honors Project and Presentation. F, I, and S.

Recreation

201 Historical and Sociological Foundations of Recreation and Sport (3). * F and S. A study of recreation and sport in the context of their history and development as well as an overview of their role in, and significance to, contemporary society. *J. Timmer, D. DeGraaf*.

203 Leadership in Recreation Programs (3). F This course is designed to conduct an in-depth investigation of basic leadership skills related to the delivery of recreation programs and related human services within a Christian worldview. An overview of the leadership theories, concepts, and strategies related to the delivery of human services will be provided. A leadership lab will be used to develop and practice team building skills, group facilitation, and leadership techniques, as well as problem solving skills that will be useful in leading recreation programs. *D. DeGraaf*.

205 Therapeutic Recreation with Special Populations (3). S, alternate years. A general orientation to therapeutic recreation and its role in serving the needs of persons with varying abilities. The etiology, characteristics, and considerations for treatment of persons with a wide range of common diseases and disorders are reviewed and discussed. Practical application and adaptations for serving the recreation and leisure needs of persons with disabilities will be made. *G. Van Andel*.

215 Recreation for Persons with Special Needs (3). Philosophy and basic concepts relating to planning and conducting programs in educational and community settings for individuals with disabilities. Concepts and techniques in program planning, leadership, and adaptations of facilities, activities, equipment in physical education and recreation services for individuals with special needs are reviewed and discussed. *J. Timmer*.

301 Measurement and Evaluation in Physical Education and Recreation (3). See Physical Education 301.

304 Management of Leisure Services (3). S. A study of the principles, policies, theories,

and procedures involved in the organization and administration of leisure services in a variety of settings. Prerequisite: Recreation 201 or 203. *D. DeGraaf*.

305 Program Planning and Development (3). F. A study of the principles and techniques of recreation program development. The application of a program development model, which is used in the organization and planning of recreation programs is emphasized. Use of selected computer software programs for program administration and promotion will also be developed. Prerequisite: Recreation 201 or 203. *D. DeGraaf*.

308 Recreation Program and Facility Management (3). I. This course will review the principles and procedures related to the operation and care of private and public recreation resources, areas, and facilities. Topics will include: Establishment of legal authority for operations, developing policies and guidelines, interagency coordination and/or competition, safety and security, and systems evaluation. Prerequisite: Recreation 305 or permission of the instructor. *Staff*.

310 Theory and Philosophy of Leisure (3). F Core capstone course. This seminar course reviews the theories and philosophies of work, play, and leisure and their influence on contemporary culture. Discussions on selected readings help develop an understanding of the political, sociological, psychological, economic, and theological aspects of work, play, and leisure in contemporary society. Emphasis is placed on the development of a Reformed Christian perspective and its implications for personal life and professional practice. Prerequisites: Biblical Foundations I or Theological Foundations I, Developing a Christian Mind, and Philosophical Foundations, and Recreation 304 or 305. *G. Van Andel*.

312 Recreation and Youth Development (3). F, alternate years. This course will provide an overview of youth serving organizations and their role in the development of youth in the 21st century. Models and strategies for organizing and coordinating effective youth development programs will be presented as well as examining how recreation programs fit into youth development strategies. Not offered 2002-03. *D. DeGraaf*.

314 Principles of Therapeutic Recreation (3). F alternate years. An introduction to the history, philosophy, and concepts of therapeutic recreation. An orientation to the role and function of therapeutic recreation personnel in the treatment of persons with psychological impairments, physical impairments, developmental impairments, pediatric illnesses, and the problems of aging are presented. Prerequisite: Recreation 205 or permission of the instructor. Not offered 2002-03.

324 Therapeutic Recreation Practice (3). F, alternate years. An introduction to the basic methods and techniques used in the delivery of therapeutic recreation services. Skills in interpersonal and helping relationships are reviewed and practiced in the context of their application to specific treatment approaches including leisure counseling, play therapy, physical confidence classes, stress-challenge, and physical fitness programs. Prerequisites: Recreation 205 and 314 or permission of the instructor. *G. Van Andel.*

346 Field Internship and Seminar (12). F, S, and SS. This course involves a one-semester field experience in a recreation service or agency. The seminar focuses on the problems and issues involved in relating classroom learnings to professional practice. Prerequisites: Completion of all courses in the recreation program, a minimum cumulative grade point average of "C" (2.0), and the approval of the department. *G. Van Andel, D. DeGraaf.*

391 Honors Project and Presentation. F, I, and S. *Staff.*

Health

202 Foundations of Health Education (3). F, alternate years. This course will provide students with an introduction to basic issues in the development of Health Education. In addition to the history and philosophy of Health Education, topics will include the following: Health promotion, professional competencies, ethics, faith perspectives, and professional organizations. *D. Bakker.*

203 First Aid and Emergency Care (2). F This course will enable the student to acquire increased accident and safety awareness, as well as understand the liability aspects of administering first aid. The course will cover the cognitive and practical skills of standard first

aid, artificial respiration, and CPR. Opportunity for American Red Cross Certification in adult, child, and infant CPR and first aid will be offered as part of the course. *D. Bakker.*

254 Nutrition (3). F and S. This course will provide the student with a basic understanding of human nutrition. Special emphasis will be placed on the role of food and nutrients in sustaining optimal health. Specific topics of study will include nutrition as it relates to athletic performance, the onset of diseases, and obesity. Prerequisite: Biology 115, 206, or equivalent. *J. Walton.*

265 Basic Health Concepts: Mental Health, Fitness, Sexuality, Aging, Addictive Behaviors, and Death (3). F, alternate years. This course is designed to provide students with basic health content. Topics to be discussed include a Christian perspective on health and wellness, mental health and stress, physical fitness, sexuality and reproduction, addictive behaviors, and aging and death. Prerequisite: Biology 115 or equivalent. Not offered 2002-03. *D. Bakker.*

266 Basic Health Concepts: Diseases, Substance Abuse, Community, and Environment (3). S, alternate years. This course is designed to prepare Health Education minors with a wide variety of Health Education content include the following: A reformed perspective on health, risk factors for lifestyle diseases, consumer health, environmental health, lifestyle and communicable diseases, substance abuse, and cancer. Prerequisite: Biology 115 or permission of the instructor. This course may be taken before Health 265. *D. Bakker.*

307 Community Health (3). I. This course focuses on the health needs of individuals in a variety of community settings. Students will learn about current health and non-health conditions affecting U.S. communities. Open to all juniors and seniors interested in health-related professions. *J. Walton.*

308 Administration and Methods (3). S, alternate years. This course is designed to provide experiences that will enable the student to develop methodology, management, administrative, and instructional skills required to plan and implement a contemporary Health Education program in school settings. Prerequisite: Health 202 or permission of the instructor. Not offered 2002-03. *D. Bakker.*

History

Professors D. Bays, M. Bendroth, **J. Bratt, J. Carpenter, B. de Vries, D. Diephouse, D. Howard (chair), D. Miller, W. Van Vugt, **R. Wells
Associate Professors R. Jelks, W. Katerberg, K. Maag, F. van Liere, K. van Liere
Assistant Professors R. Semple, T. Wagstrom

Students majoring in history will design programs with their departmental advisor. Such programs will reflect the students' interests within the field of history and in related departments, their anticipated vocational goals, and the demands of the historical discipline. For most programs a proficiency in either French or German is advised. Students are asked to consult with departmental advisors 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. One upper-level interim course may be used as an elective in any of the history majors or minors. All programs must include at least one course treating a period before 1500 and at least one course treating a period after 1500. Majors must take at least two courses besides History 394 and 395 on the 300 level. Minors must take at least one course besides History 394 on the 300 level.

WORLD HISTORY MAJOR/ SECONDARY OR ELEMENTARY EDUCATION WORLD HISTORY MAJOR

History 151 or 152
Three from History 231-246, 271-272, 331-346, or 371-372
One from History 251-257 or 351-358 (Secondary and Elementary Education majors take History 229)
One from History 261-268 or 362-364
Two electives
History 294
History 394
History 395

EUROPEAN HISTORY MAJOR/SEC- ONDARY OR ELEMENTARY EDUCA- TION EUROPEAN HISTORY MAJOR

History 151 or 152
Three from History 261-268 or 362-364
One from History 231-246, 271-272, 331-346, or 371-372
One from History 251-257 or 351-358 (Secondary and Elementary Education majors take History 229)
Two electives
History 294
History 394
History 395

U.S. HISTORY MAJOR/SECONDARY OR ELEMENTARY EDUCATION U.S. HISTORY MAJOR

History 151 or 152

Three from History 251-257 or 351-358
One from History 261-268 or 362-364
One from History 231-246, 271-272, 331-346, or 371-372
One additional European or World History Course
One elective
History 294
History 394
History 395

In addition to the courses listed in the major, all secondary education history majors must take three additional cognate courses: 1) Political Science 101; 2) Geography 110; and 3) Economics 151.

NON-EDUCATION HISTORY MINOR

History 151 or 152
Two courses from one and one course from another of the following three clusters:
History 229, 251-257, or 351-358
History 231-246, 271-272, 331-346, or 371-372
History 261-268 or 362-364
Two electives
History 294 or 394

SECONDARY EDUCATION HISTORY MINOR

History 151 or 152
History 229
One from History 256, 257, or 351-358
History 255
One from History 231-246, 271, 272, 331,

338, 346, 371, or 372
One from History 261-268, 362-364
History 294 or 394

ELEMENTARY EDUCATION HISTORY MINOR

History 151 or 152
History 229
One from History 255-257 or 351-358
One from History 231-246, 271-272, 331,
338, 346, 371, or 372
One from History 261-268 or 362-364
One elective
History 294 or 394

ELEMENTARY SOCIAL STUDIES GROUP MAJOR

Students must take two specified courses from each of the following four disciplines: Economics, Geography, History, and Political Science. (Specific course choices are listed in the *Teacher Education Program Guidebook*). In addition, students must complete a sequence of courses from one of these disciplines chosen in consultation with a social studies education advisor. Advisors: D. Miller and D. Howard, History Department.

ELEMENTARY AND SECONDARY SOCIAL STUDIES GROUP MINOR

Economics 221
Economics 222
Geography 110
One course from Geography 210, 230, 310,
or 320
History 151 or 152
History 229
Political Science 101
Political Science 202

Prior to the teaching internship, students must have the approval of the department. Criteria for approval are found in the Teacher Education Program Guidebook, available in the Education Department. Students seeking special advice on teacher education programs should consult D. Miller or D. Howard.

A minimum grade of “C” (2.0) in History 151 or 152 is required for admission to major programs. The core requirement in history must be met by one course from History 151, 152, or 151/152 Honors. This course should be

taken before courses on the 200- or 300- level, which are not recommended for first-year students. Any other regular course in the department will satisfy an additional requirement in the contextual disciplines.

COURSES

Elementary Courses

151 **History of the West and the World I** (4). F and S. This course examines the history of early human societies. The course begins with paleolithic and neolithic cultures and their transformation into ancient urban civilizations. It continues with the development of the classical civilizations and the major world religions, and the interaction of impulses from these, down to the European transoceanic voyages around the year 1500 A.D. Secondary themes include evolution of societies around the world, the contrast of urban and sedentary and nomadic strategies for societies, and the development of technology. *B. de Vries, D. Howard, F. van Liere.*

151H **Empires in Antiquity** (4). S. The course will include one session per week for comprehensive coverage of world history from early hunting-gathering societies to the medieval mercantile empires. This will set up the main activity, a series of writing assignments on the course theme, culminating in each student's contribution of a chapter to an in-class-published book, *Keeping the Barbarians at Bay: Global Patterns of Inclusion and Exclusion in Ancient Empires*. A discussion of *Waiting for the Barbarians* (the poem of Constantine Cavafy and the novel of J.M. Coetzee) will direct the class's viewpoint to imperial frontiers. A concluding application of the study will be discussion of the question: “Does the post-Cold-War global behavior of the United States fit the typology of empire defined by our study?” A book-signing party will replace the final examination. This honors course meets a core requirement in the History of the West and the World. Enrollment is limited to 20 students. *B. de Vries.*

152 **History of the West and the World II** (4). F and S. The history of modern human societies is studied. The course includes coverage of the scientific revolution and the European Enlightenment tradition; key political, economic, social, and religious develop-

ments in the West, including the non-Western world's contribution and reaction to them; and events of global significance through the latter half of the twentieth century, such as the industrial revolution, the world wars, and decolonization. *Staff*.

152H Honors West and the World (4). F An intensive study of world history from 1500 to the present. Within the general framework of a survey course we will explore several important themes in depth and from various cultural perspectives: The rise and decline of "the West" within the larger world, the impact of global systems on traditional communities, and the importance of gender in maintaining and transforming cultural boundaries. We will research these problems together by reading "great books" and by pursuing individual and group writing projects and presentations. This course meets a core requirement in the History of the West and the World. Enrollment in honors History 152 is limited to 20 students. *M. Bendroth*.

Intermediate Courses

All 200-level courses presuppose one course in History or permission of the instructor.

224 Canada (3). S. A tracing of the founding and character of New France followed by a careful examination of nineteenth- and twentieth-century Canada. *W. Katerberg*.

225 England (3). 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; and the growth of social, economic, and political institutions in the modern period. *W. Van Vugt*.

226 France (3). S. The history of France from the religious wars of the sixteenth century to the present, with some initial attention given to the country's ancient and medieval origins. The course will emphasize the role of religion and religious conflict in the making of modern France. The centrality of the revolution of 1789 to the national identity will thereafter be underscored. Not offered 2002-03.

227 Germany (3). S. 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 Third Reich, the Weimar Republic and postwar division and reunification. Not offered 2002-03.

228 Spain (3). F. A selective survey of Spanish political, social, and religious history from the Middle Ages through the 1980's, with particular emphasis on the medieval era of Christian-Jewish-Moorish convivencia and the imperial period of the sixteenth and seventeenth centuries. Particular focus on such topics as the Inquisition, the role of the Catholic Church, the Dutch Revolt, and the early colonization of Spanish America. For the twentieth century, the course examines the Spanish Civil War, the Franco era, and the transition to democracy. Not offered 2002-03.

229 U.S.A. (4). F. 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.* *W. Van Vugt*.

World Regions

231 Ancient Near East (3). 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 records. Special consideration is given to geographical setting, artistic and linguistic traditions, and cultural contacts with European civilizations. *B. de Vries*.

232 Hellenistic and Late Antique Near East (3). F. A study of Near Eastern civilization from the conquests of Alexander to the early Islamic Caliphates, that is, from 350 B.C. to A.D. 900. Particular emphasis is placed on the cultural syncretism of the age, which saw the development of Judaism and the emergence of Christianity and Islam. Scientific, technical, artistic, social, religious, and political developments will all receive attention. Not offered 2002-03.

233 Modern Middle East (3). S. A study of Near Eastern history from the eleventh century to the twentieth century, with special emphasis on topics concerning the interaction between the Near East and the emerging West, including the Crusades, the Ottoman Empire, the “Eastern Question” in European diplomacy, colonialism, nationalism, and Islamic revival. Analysis of the emergence of modern states in the Near East and their various responses to the impact of the West. *D. Howard.*

235 Early South Asia (3). F. A cultural history of the Indian subcontinent from the earliest times to the eighteenth century. Primary emphasis will be placed on the civilization of Hindustan and the interplay of Hindu and Islamic religious and cultural forces, which took place there up to the advent of European imperialism. Archaeological, literary, and artistic evidence receive equal attention. *T. Wagstrom.*

236 Modern South Asia (3). S. A survey of the history of the Indian subcontinent, emphasizing the period from the seventeenth century to the present. The emergence of the modern nations of India, Pakistan, and Bangladesh is examined against the background of British colonialism and the global economic and technological conditions of modernity. Economic, social, political, religious, and intellectual themes receive consideration. *T. Wagstrom.*

238 Latin American History (4). S. A study of continuity and change in Latin America from Pre-Columbian times to the present. Topics covered include the mingling of races and cultures in the Conquest Era, the long-term influence of colonial institutions, the paradox of economic development and continued poverty, the Cold War struggle between forces of the Left and the Right, and the growth of Protestantism in a traditional Catholic society. *D. Miller.*

241 Sub-Saharan Africa to 1600 (3). S. A wide-ranging survey of prominent themes encompassing several centuries of African history. The principal aim is to introduce students to some of the main currents of African history and to provide insights into its society and culture. Themes include: Pre-colonial times, culture, commerce, and state building;

the trans-Saharan and Atlantic trade; Islam and the sociopolitical changes it brought; and the Atlantic Slave trade. *Staff.*

242 Modern West Africa (3). F. An examination of the historical, political, and economic development of West Africa since 1800. The course examines European imperialism in the late nineteenth and twentieth centuries, the development of African nationalism, resistance and struggle for independence, neo-colonialism, and the origins of contemporary social, economic, and political problems in the new states of the area. *Staff.*

245 East Asia to 1800 (3). F. This course is a history of East Asian civilizations from early times until the early modern period. Emphasis is on the history of China and Japan, but the history of Korea is also included. Primary objectives are for students to grasp the essential patterns of Chinese, Japanese, and Korean social structures, political systems, cultural values, and religious and ethical norms as they developed through the late traditional period through to 1800 and also to appreciate the similarities and differences among these civilizations. *Staff.*

246 East Asia since 1800 (3). S. A history of East Asia from 1800 to the present, this course emphasizes the history of China and Japan, but the history of Korea is also included. Primary objectives are for students to grasp the essentials of the patterns of East Asian societies on the eve of the modern period, then to gain an appreciation of the travails of modernity in all three countries, as they were transformed from traditional societies to modern nation-states. Another objective is to gain an appreciation of the inter-relatedness of the East Asian nations’ history in the past 100 to 150 years. *D. Bays.*

North America

251 Colonial America, 1500-1763 (3). F. A historical study of the British North America from the first European settlements to the eve of the American Revolution. After examining the European background of and Native American responses to colonization, the course will trace the development of the different social systems and regional cultures that emerged along the Atlantic: Puritan New England, plantation Virginia, commercial mid-

Atlantic, Caribbean Carolina, and Scots-Irish backcountry. Special emphasis is given to the role of religion and politics in launching and steering this process. Not offered 2002-03.

252 The American Republic, 1763-1877 (3). S. An examination of the emergence of the United States from the revolutionary era through Reconstruction, tracing the challenges that faced its citizens in building and preserving a national union. The course will study the period of Independence and Federalism, Jeffersonian, and Jacksonian politics, westward expansion, slavery and sectionalism, the Civil War and Reconstruction, and post-War expansion. *W. Van Vugt.*

253 Industrial America, 1877-1945 (3). F. A historical study of the United States from the end of Reconstruction through World War II, treating political and cultural developments against the background of the nation's turn toward an industrial economy, urban society, and global empire. Particular attention will be paid to religious currents, increasing racial/ethnic complexity, and the changing fortunes of the liberal political-economy in war, peace, prosperity, and depression. *M. Bendroth.*

254 Recent America, 1945-present (3). S. A study of American history since World War II, focusing on the national impact of the United States' unprecedented international role and power. Particular attention will be paid to the civil rights movement, culture and politics under the Cold War, the 1960s "youth revolution" and renewal of American feminism, the emergence of postmodern culture, and the transition to a postindustrial economy. *M. Bendroth.*

255 African-American History (3). F. 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. *R. Jelks.*

256 Women and Gender in U.S. History (3). S. An introduction to topics in the history of women in North America and to the use of gender as a historical category of analysis. This course examines experiences unique to women as well as the changing perceptions of masculinity and femininity evident in different historical epochs. *M. Bendroth.*

257 History of the North American West (3). F. A study of the American West from the pre-Columbian plains to present-day California, and as a landscape of the mind as well as a real place. The course will plumb the historical significance of the myths made about the West as well as events which actually transpired there, and students will be encouraged to reflect on what the existence of the two "Wests" tells them about America as a whole. *W. Katerberg.*

Europe

261 Ancient Greece and Rome (3). 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 style. 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. *B. de Vries, M. Gustafson.*

262 Europe in Late Antiquity and the Early-Middle Ages (3). F. A study of the emergence of Europe out of the Roman Empire alongside the Byzantine empire and Islamic commonwealth. Special attention is given to the Christianization of the Roman Empire, Christian missions to Western Europe, the role of monasticism, and the way that early medieval Europe, like its neighboring cultures, integrated its Roman-Hellenistic heritage into its new forms. *F van Liere.*

263 Europe in the High- and Late-Middle Ages, 900-1450 (3). S. This course includes a treatment of one of the most formative periods in the development of European culture and institutions, when strong monarchies emerged out of feudalism, and a new religious vitality transformed Christian spirituality. These impulses are traced through the rise of schools and universities, the Crusades, and the role of the papacy as a unifying political force in Western Christianity, concluding with the late-medieval economic and demographic crisis and the break-up of the medieval worldview in Renaissance Italy. *F van Liere.*

264 Reformation Europe (3). F. A survey of Western European political and social history from the late Middle Ages to the early seven-

teenth century, with particular emphasis on the Protestant Reformation, its social and intellectual origins, and its political and social contexts and consequences. Topics include late medieval reform movements, the northern Renaissance, the spread of Lutheranism and Calvinism, the Reformation in England, Spain and the papacy during the Counter-Reformation, and the Dutch Revolt. *K. Maag.*

265 Early Modern Europe (3). S. A survey of some of the main currents in political, social, and intellectual history from the early seventeenth century through the late eighteenth century, with particular attention given to selected “revolutionary” political and intellectual movements such as the English Revolution, the emergence of modern science, the Enlightenment, and the French Revolution. *K. van Liere.*

266 Nineteenth-Century Europe (3). F. 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. *R. Semple.*

267 Twentieth-Century Europe (3). S. The history of Europe from World War I to the present. This course examines the social, cultural, and political implications of the century’s major events such as the two World Wars, the rise of totalitarianism, the Holocaust, the emergence of the Cold War, the founding of the European Union, and the fall of the Berlin Wall. Special attention is given to the enduring tension between European unity and national particularism as well as to the burden of the European past. *R. Semple.*

268 Women and Gender in European History (3). S. An introduction to topics in the history of women in Europe and to the use of gender as a historical category of analysis. This course examines experiences unique to women as well as the changing perceptions of masculinity and femininity throughout European history. Not offered 2002-03.

Global Histories

271 War and Society (3). F. A survey of key episodes in world history from the perspective of the social history of war. The course

emphasizes the social, economic, cultural, and religious contexts and consequences of warfare. Case studies drawn from various civilizations and from the ancient, medieval, and modern eras explore the thesis that armed conflict has been a significant variable affecting the processes of world historical development. Not offered 2002-03.

272 Contemporary World (3). S. A topical analysis of twentieth-century history, using the Korean War as a point of entry for the study of post-World War II global dynamics. The course will consider the antecedents and consequences of the war, but especially the meanings it held in the eyes of the different nations effected by the conflict, and the policies and behavior they generated in response. *D. Diephouse.*

Theory and Practice of History

294 Research Methods of History (2). F, I, and S. An introduction to historical sources, bibliography, and research techniques, giving particular attention to the different genres of history writing, the mechanics of professional notation, and critical use of print and electronic research data bases. *Staff.*

Advanced Courses

Enrollment in all 300-level courses presupposes two courses in History or permission of the instructor.

World Regions

331 Studies in Middle Eastern History (3). A study of the relationship between the United States and the Middle East in the twentieth century. With the collapse of European colonial empires and the onset of the cold war after World War II, the United States became increasingly involved in Turkey, Iran, Israel, Egypt, and the other Arab states. The course examines political, economic, social, and religious aspects of this environment. Issues taken up include military alliance systems, economic liberalism, politicized Islam, Christian Zionism, cultural exchanges, and popular images and the academic critique of Orientalism. Discussion of readings is emphasized. This course is eligible for concurrent enrollment with History 394.

338 **Mexico and the Americas** (3). * F A study of crucial phases in the history of Mexico, from its pre-Columbian civilizations through its revolutionary experience in the twentieth century. Special emphasis will be given to varying interpretations thereof, upon the role of religion in supporting and challenging political regimes, and upon the Mexican diaspora in the United States. This course is eligible for concurrent registration with History 394. Not offered 2002-03.

346 **Modern China** (3). * S. A comprehensive treatment in depth of Chinese history from the Qing Dynasty, i.e. about 1650 to the present. In addition to the basics of political, social and economic history, the course will also stress intellectual and religious currents, including the role of Christianity. This course is eligible for concurrent registration with History 394. *D. Bays.*

North America

351 **State and Local History** (3). * F An examination of how to use local, regional, and state resources to interpret history at these levels within the larger contexts of United States and world histories. Special emphasis is given to the requirements that such public history disciplines as archives, historic preservation, resource evaluation, and planning expect from their practitioners. Michigan, West Michigan, and Grand Rapids serve as the case studies for the principal topics. Not offered 2002-03.

354 **Religion, Society, and Culture in 20th-Century America** (3). * S. A study of religion in modern America, tracing a theme or problem that connects the different phases of development, confessional traditions, and socio-cultural contexts pertinent to Americans' religious experience in this era. Topics might include religion and the city, religion and race, religion in popular culture, faith and skepticism, etc. This course is eligible for concurrent registration with History 394. *M. Bendroth.*

355 **American Intellectual History** (3). * S. A study of the principal modes of American thought from the emergence of the Enlightenment and Evangelicalism around 1740 to the first signs of Modernism a century and a half later. The course will trace "reason" and

"revival" as conflicting and cooperating means of building a proper "republic", and thus will be attending to ideas' social locations and political purposes along with their inherent logic. Not offered 2002-03.

356A **U.S. Social and Cultural History** (3). * F 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. This course is eligible for concurrent registration with History 394. *R. Wells.*

356B **Race and Ethnicity in American History** (3). * S. This course studies a particular aspect of race or ethnicity as a factor in American history. For 2002-03 it will focus on The Civil Rights Movement, Reconstruction to 1978. Students will explore the efforts of African American communities, northern and southern, along with their allies, to strike down the laws and customs of racial segregation, discrimination, and oppression. Particular attention will be paid to the religious bases of the protest tradition and to the politics, economics, and sociology of race in the environment of the times. This course is eligible for concurrent registration with History 394. *R. Jelks.*

357 **U.S. Economic History** (4). * S. A study of United States economic history from colonial times to the present, emphasizing the foundations of the American economy, the dynamics behind American economic expansion, the history of American business, and the costs and benefits of industrialization and modernization. *W. Van Vugt.*

358 **Studies in the North American West** (3). * S. A comparison of frontier experiences in the United States with those in other parts of the world such as Argentina, Australia, Canada, New Zealand, and South Africa. Following a theoretical overview of comparative history, the course will focus on several major topics: Settlement patterns, environmental history, race relations, gold rushes, prostitution, and violence. The goal of the course is to determine what was unique about American frontiers and what was common to all

regions of European settlement and conquest, thus putting American history in global context. Not offered 2002-03.

Europe

362 Studies in Medieval History (3). * F Focuses on a particular topic or period within the Middle Ages for advanced historical study. Calling upon the rich variety of sources in medieval culture and society, it practices historical analysis on interdisciplinary materials. Topic will vary year by year according to the interests of the instructor. Not offered 2002-03.

363 Studies in Early Modern Europe (3). * F This course focuses on a particular topic in early modern European history for advanced study. For 2002-03 it will examine the phenomenon of “the Renaissance” as a European cultural movement, assessing its different manifestations and interpretations through lenses such as intellectual history, art history, popular culture, and philosophy. We will examine the origins of the movement in the city-states of northern Italy, its spread into other Western European lands, and the ways it helped to reshape the learning, politics, religion, and arts of the time. This course is eligible for concurrent registration with History 394. *K. van Liere.*

364 Politics and Identity in Modern Europe (3). * S. Exploring the changing roles of individuals in post-1789 European society, this course examines major trends and events through the perspective of their impact on the self-perception of individuals. The course proceeds through such topics as the development of working-class consciousness, the rise of the respectable middle class, the Nazification of “ordinary Germans”, and the meaning of religious identity in modern society. Not offered 2002-03.

Global Histories

371 Asia and the Pacific since 1850 (3). * F This course will examine the experience and impact of Westerners in East Asia, principally between 1850 and 1950. It will take a sampling from each category of Western residents (many of whom were Americans) who played interesting roles in the modern history of China, Japan, and Korea: Foreign missionaries, merchants, diplomats, and academics. In

addition to other course work, each student will select a case study of an individual, family, or small group as the subject of a paper. Not offered 2002-03.

372 Europe's Global Empires (3). * S. Examines dimensions of European imperialism from its inception in the fifteenth century to its demise in the twentieth. The course may focus on the empire of a single European nation (e.g., Britain or Spain) or may conduct a comparative study of several nations' empires from a particular analytical perspective. Not offered 2002-03.

Theory and Practice of History

359 Seminar in the Teaching of History at the Secondary Level (3). F and S. This course is designed to assist student teachers in developing appropriate goals and effective methods of teaching history at the high school and junior high level. The seminar also provides a forum for the discussion of problems that develop during student teaching. Prerequisites: Concurrent enrollment in Education 346 and an approved history major, at least three courses of which must be taken at Calvin College. *D. Miller.*

380 Field Work in Middle East Archaeology (5). See Archaeology Interdisciplinary 340.

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

390H Honors Tutorial In History (3). * F

391H Honors Senior Thesis (3). * S. A two-semester sequence designed to lead students to the writing of a more substantial seminar paper than is possible in History 394. Students spend fall term in History 390H conducting a thorough investigation of the secondary literature on and around a topic which they choose in close consultation with their advisor. They proceed in spring term to write a senior thesis upon that topic. Required for students in the department's honors track and highly recommended for those planning to pursue graduate studies in history. *Staff.*

393 Museum Studies (3). * F and S.

394 Research Seminar (2). * F and S. An intensive study of a specific question or topic to the end of producing an article-length (20-25 pp.) paper based on original sources and addressing a well-defined historiographical

problem in the field. The course must be taken in conjunction with a designated 300-level course in the department and after successful completion of History 294. Not open to first- or second-year students. *Staff*.

395 Historiographical Perspectives (3). * F and S. The capstone in the history major, this course examines the history of history writing in the Western tradition with a view toward articulating a critical Christian perspective on the discipline. Emphasis is on reading

and discussion of significant monuments of Western historiography. By means of persistent critical reflection throughout the course on the texts and on current epistemological and methodological issues, a variety of Christian perspectives are engaged and evaluated, and the students challenged to articulate their own. *W. Katerberg*.

Graduate Courses

590 Independent Study. F, I, and S. *Staff*.

Interdisciplinary

This section includes not only courses that are interdisciplinary, but others also that do not fit logically into any single department or which are in disciplines not otherwise offered at Calvin College.

COURSES

110 Research and Information Technology (1). F and S. A first-year introduction to the computer and to college-level research skills, making full, but discriminating use of current electronic information technology and the resources of the Hekman Library, with a discussion of the cultural impact of computer technology and the ethical responsibilities of its users.

149 First Year Prelude (0). F. The First Year Prelude Program begins in Quest and continues in fall semester class sessions that introduce students to Calvin College as a Christian community of inquiry. The course is a preparatory and integral component of Interdisciplinary W50 (Developing a Christian Mind).

160 Energy: Resources, Use, and Stewardship (4). F. An introduction to the nature of energy and energy transformations with an emphasis on the different forms of energy and the use and availability of different energy resources, this course includes a study of the environmental implications of the use of a variety of energy resources such as fossil fuels, renewable resources, and nuclear energy resources. This course is taught from a biblical worldview and includes a discussion of

the relationship between God, humans, the creation, the nature of science, and the validity and limitations of scientific knowledge. From these discussions a biblical view of stewardship and its implications for our use of energy resources is developed. *Laboratory. K. Piers*.

191 Introductory Meteorology (4). See Geography 191 for the full course description.

205 Societal Structures and Education as a Social Enterprise (3). F and S. An examination of the interaction between education and the other systems and institutions (e.g., political, economic, and cultural) that shape society. This course will examine how education is shaped by and is reshaping these systems and institutions. Particular attention will be given to the impact of race, class, and gender on schooling and society. Community-based research projects will challenge students to examine these issues in real-life contexts as well as introducing them to social science research methodology. Christian norms, such as social justice, will shape this critical analysis of the interaction between education and society. This class is appropriate for all students who are interested in education and society and meets a core requirement in the Societal Structures category. *D. Isom*.

210 History of Science (3). S. This course may not be the only college science course taken for core. An examination of the emergence of modern science in the sixteenth and seventeenth centuries and of the major developments on 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 151 or 152 (preferred), one year of high school chemistry or physics, and one college science course, or consent of the instructor. *A. Leegwater.*

213 Teaching Science in the Elementary School (2). F, I, and S. The consideration of methods, materials, and strategies for teaching science effectively in elementary school. Discussions of the relationship of Christian faith to the teaching of science in the classroom. Examination of various materials for teaching science, with consideration of criteria for evaluation of those curricular materials and with consideration of relationships among science, technology, and society and their implications for science teaching. Includes laboratory activities. Prerequisites: At least one science content course and completion of or concurrent enrollment in Education 301. *Staff.*

301 Introduction to Second Language Education for Elementary Teachers (3). * S. This course prepares students to teach in classrooms where English is the second language. In this course, students apply their knowledge of second language acquisition to the classroom setting and learn to recognize linguistic, cognitive, affective, cultural, and social facets influencing the acquisition of a second language. Course topics include student placement, classroom methods and materials, curriculum, and assessment. Students in the Interdisciplinary ESL minor observe in elementary classrooms. Students with a bilingual minor take this course prior to their student teaching semester. They will also observe in elementary classrooms. Students in the ESL minor endorsement program (for education students) for Michigan Teacher Certification must take this course in the same semester as Education 348. *E. Greenway.*

302 Introduction to Teaching as a Second Language for Secondary Teachers (3). * F. This course prepares students to teach in classrooms where English is the second language, helping them bring their knowledge of applied linguistics to classroom settings. In this course, students recognize linguistic, cognitive, affective, and social factors that influence the acquisition of another language. Course topics will include student placement, classroom methods and materials, curriculum, and assessment. Students in the ESL minor leading to an ESL endorsement on a Michigan Teacher's Certificate must enroll in Education 349, the same semester they take Interdisciplinary 302.

306 Introduction to Medieval Studies (3). I, offered biennially. A classroom introduction to the skills that are specific to the interdisciplinary method of studying the Middle Ages. Although it is primarily intended for those students who have selected a minor in medieval studies, it is open to anyone with an interest in the Middle Ages, and it may also serve as a useful course for those who intend to go on to a graduate program in history, literature, or medieval studies.

340 Field Work in Archaeology. See Archaeology for course description.

374 Models of Ministry to Youth (2). This course provides a forum for students, youth ministry practitioners, and theological scholars to investigate and evaluate a variety of models for the church's ministry to the youth of the church and community. Students, practitioners, and scholars will employ a variety of methods including, but not limited to, field trips, presentations by nationally recognized youth ministry experts, and critical theological reflection on the issues associated with youth ministry. The course is specially designed for cross registration with students from Calvin College and other undergraduate programs.

393 Project Neighborhood Service-Learning Seminar (1). F and S. This seminar integrates content related to urban community assessment, organization, and development in connection with service learning in the local community, using a cycle of action and reflection, in a group composed of Project Neighborhood Lake Drive House residents. *Staff.*

394 **Gender Studies Capstone** (3). S. An integrative course that refers to previous work in the minor, focusing particularly on current research, theory, and controversies in the field. Special attention will be paid to nurturing mature Christian thinking on gender issues.

590 **Independent Study**. F, I, S, and SS. Students normally register for this course in conjunction with a course in one of the disciplines. Prerequisite: Admission to a Master's degree program.

A300 **Portfolio Development** (1). Development of a professional portfolio is a value in and of itself and may be instrumental in seeking placement in business and industry. However, since adults often learn through life experience, some of the same subject matter taught in formal college courses, a portfolio can also be used to attain additional college credit. The portfolio permits possible receipt of additional semester hours by providing documented evidence of learning (1) through participation in professional schools and informal courses and (2) through participation in employment or volunteer activities. This course assists the student in preparing the portfolio for which the one semester hour is

granted upon completion. Completing the course does not guarantee additional credit for prior learning, but following the completion of the course, the Adult Learner may petition for prior learning credit from the appropriate college department. Prerequisite: Classification as an Adult Learner.

W50/150 **Developing a Christian Mind** (3). I and S. *. Taken during the first-year interim, this course introduces students to the central intellectual project of Calvin College, the development of a Christian worldview and a broad, faith-based engagement with the ambient culture. A set of common readings sketches out basic Biblical themes and helps students begin to formulate a Christian frame of reference as they pursue their academic vocation. In addition to these common readings and themes, each section of the course defines a particular academic issue to explore from the perspective of Christian faith and praxis.

* Several sections of DCM are offered during the spring semester to accommodate first-year students enrolled in the Foreign Language sequence 121-123. In addition, individual and multiple sections of the course have specific subtitles indicating the special focus of each.

Japanese Language and Literature

Associate Professor L. Herzberg
B. Carvill (*chair*)

JAPANESE MINOR

Japanese 101
Japanese 102
Japanese 201
Japanese 202
Japanese 215
Japanese 216
Japanese 217 or 218

JAPANESE STUDY GROUP MINOR

Japanese 101
Japanese 102
Japanese 201
Japanese 202

Art 241, History 203, Political Science 205,
and an approved Interim

The foreign language core requirement can be met by the study of Japanese through the intermediate level (Japanese 202).

COURSES

101 **Elementary Japanese** (4). F. An introduction to Japanese language and culture, stressing both spoken and written Japanese. After one semester students will be able to carry on simple conversations in Japanese, read dialogues written in Japanese, and understand

some fundamentals of Japanese social values and ways of thinking. *L. Herzberg.*

102 Elementary Japanese (4). S. A continuation of Japanese 101. Continued study of Japanese grammar with equal emphasis on improving conversational proficiency and on reading and writing Japanese. Many more “kanji” (Chinese characters) will be introduced for reading and writing and as a medium for gaining insight into Japanese culture. Prerequisite: Japanese 101 or permission of the instructor. *L. Herzberg.*

201 Intermediate Japanese (4). F. The goal of this course is to further the student’s ability to speak, understand, read, and write the Japanese language. Extensive oral drills and reading exercises continue to be used. By the end of the term, the student will know 300 “kanji”. Numerous cultural notes and written dialogues portraying various social situations provide insight into Japanese culture and various ways of thinking. Prerequisite: Japanese 102 or permission of the instructor. *L. Herzberg.*

202 Intermediate Japanese (4). S. This semester completes the study of basic Japanese grammar and syntax. By the end of the semester the student will have been introduced to all the basic grammar patterns of Japanese and will have mastered a total of 500 “kanji”. *L. Herzberg.*

215 Advanced Conversation (4). F. This course is designed to develop advanced aural

comprehension skills as well as advanced competence in spoken Japanese through exercises, drills, and conversation in class. Students will also continue their study of the written language by learning many new “kanji”. Prerequisite: Japanese 202 or permission of the instructor. *Y. Tsuda.*

216 Advanced Grammar and Composition (4). S. The systematic study of advanced grammar and composition. Students will learn many new “kanji” as they improve their skills in written Japanese. Conversation practice will also be emphasized. Prerequisite: Japanese 215 or permission of the instructor. *Y. Tsuda.*

217 Introduction to Modern Japanese Literature: 1868 to the Present (3). F. A continuation of Japanese language study and an introduction to works written by major Japanese authors from 1868—when Japan opened itself to the rest of the world and entered the modern era—to the present, as well as selected readings on Japanese history, society, and culture. Prerequisite: Japanese 216. *Y. Tsuda.*

218 Further Studies in Modern Japanese Literature: 1868 to the Present (3). S. This course builds on Japanese 217 and deals with literary texts of greater linguistic difficulty. It also includes further language study and selected readings on Japanese history, society, and culture. Prerequisite: Japanese 217. *Y. Tsuda.*

Latin

See the department of classical languages for a description of courses and programs of concentration in Latin.

Mathematics and Statistics

Professors **J. Bradley, D. Brink, R. J. Ferdinands, *E. Fife, T. Jager, J. Koop,
S. Leestma, M. Stob, G. Talsma, G. Venema (chair)

Associate Professor M. Hanisch

Assistant Professors R. Pruijm, J. Turner, R. Wagstrom, T. Scofield

Adjunct Professor D. Laverell

MATHEMATICS MAJOR

Mathematics 161 or 160

Mathematics 162

Two from Mathematics 243, 231, 255, or 261

Mathematics 351

Mathematics 361

Two 300-level electives

An approved interim

Mathematics 391 (taken twice)

Cognate

Computer Science 185

This is a minimal program and students with specific educational or career plans should take more courses. Such programs are planned in consultation with a departmental advisor. A screening test is given to incoming students during orientation to determine proper placement in Mathematics 110, 160, or 161.

MATHEMATICS MINOR

Mathematics 161

Mathematics 162

Two 200-level courses

Two 300-level courses

ELEMENTARY/SECONDARY EDUCATION MATHEMATICS MAJOR

Mathematics 161

Mathematics 162

Mathematics 243

Mathematics 255

Mathematics 351

Mathematics 361

Mathematics 321

Mathematics 325

Mathematics 391 (taken twice)

An approved interim

Cognates

Computer Science 185

Mathematics 329

SECONDARY EDUCATION

MATHEMATICS MINOR

Mathematics 161

Mathematics 162

Mathematics 243

Mathematics 255

Mathematics 321

Mathematics 361

Cognates

Computer Science 185

Mathematics 329

ELEMENTARY EDUCATION

MATHEMATICS MINOR

Mathematics 221

Mathematics 222

Mathematics 132

Mathematics 110, an approved interim, or
Mathematics 162

Mathematics 143

Four from Computer Science 101, 105, 110,
120, 130, 135, 140, or 185

The minor for elementary education should be chosen in consultation with a departmental advisor as choices for mathematics courses depend on the student's background. Prior to the teaching internship, students must have the approval of the department. Criteria for approval are found in the *Teacher Education Program Guidebook*, available in the Education Department. Directed teaching in secondary mathematics is available only during the fall semester.

GROUP MAJOR

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 chairs of the three departments must approve each program of this type. Group concentrations involving economics, philosophy, and other departments are possible on an individual basis.

HONORS PROGRAM

The departmental honors program leads to graduation with honors in mathematics or mathematics education. Beyond the requirements of the general honors program, these programs require further course work and a senior thesis. Details are available from the department. These programs require careful planning to complete, and students should normally apply for admission to the departmental honors program during their sophomore year at the same time that they submit a major concentration counseling sheet.

ADMISSION TO PROGRAM

A minimum grade of “C” (2.0) in a 200-level Mathematics course is required for admission to a program of concentration in the department. The core requirements in mathematics may be met by Mathematics 100, 143, 160, 161, or 221.

COURSES

100 Mathematics in the Contemporary World (3). F and S. An introduction to the nature and variety of mathematics results and methods, mathematics models and their applications, and to the interaction between mathematics and culture. Not open to mathematics and natural science majors. Prerequisite: Meeting the Calvin admission requirement in mathematics. *Staff*.

110 Pre-calculus Mathematics (4). E 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: Three years of college preparatory mathematics. *Staff*.

132 Calculus for Management, Life, and Social Sciences (4). F and S. Functions, lim-

its, and derivatives. Applications of derivatives to maximum-minimum problems, exponential and logarithmic functions, integrals, and functions of several variables. Not open to those who have completed Mathematics 161. Prerequisite: Mathematics 143 or permission of instructor. *Staff*.

143 Introduction to Probability and Statistics (4). F and S. An introduction to the concepts and methods of probability and statistics. The course is designed for students interested in the application of probability and statistics in business, economics, and the social and life sciences. Topics include descriptive statistics, probability theory, random variables and probability distributions, sampling distributions, point and interval estimation, hypothesis testing, analysis of variance, and correlation and regression. Prerequisite: Meeting the Calvin admission requirement in Mathematics. *Staff*.

156 Discrete Mathematics for Computer Science (4). F Sets both as mathematical objects and abstract data types, logic, mathematical induction, combinatorics, and probability. Applications in computer science. Prerequisite: Computer Science 185 or permission of the instructor. *R. Pruiim*.

159 Elementary Functions and Calculus (4). F Mathematics 159 and 160 together serve as an alternative to Mathematics 161 for students who have completed four years of high school mathematics but who are not ready for calculus. Placement in Mathematics 159 or 161 is determined by a calculus readiness test that is administered to incoming first-year students during orientation. Topics include functions and their graphs, polynomial functions, trigonometric functions, exponential and logarithmic functions, limits, and derivatives. Prerequisite: Four years of high school mathematics. *S. Leestma*.

160 Elementary Functions and Calculus II (3). I. A continuation of Mathematics 159. Topics include derivatives, applications of derivatives, integrals, and applications of integrals. Historical and philosophical aspects of calculus are integrated with the development of the mathematical ideas, providing a sense of the context in which calculus was developed. Prerequisite: Mathematics 159. *G. Venema*.

161H Calculus I (4). F and S, honors section. This course serves as an introduction to calculus. Topics include functions, limits, derivatives, applications of derivatives, integrals, and applications of integrals. Historical and philosophical aspects of calculus are integrated with the development of the mathematical ideas, providing a sense of the context in which calculus was developed. Prerequisite: Either four years of college preparatory mathematics or Mathematics 110. A calculus readiness test is administered by the department during orientation and some students may be placed in Mathematics 159 on the basis of that test. *Staff.*

162H Calculus II (4). F and S, honors section. Techniques of integration; rectangular, cylindrical, and spherical coordinate systems; vectors; partial derivatives; multiple integrals; and an introduction to sequences and series. Prerequisite: Mathematics 160 or 161. Laboratory. First-year students with advanced placement credit for Mathematics 161 should normally enroll in section AP. *Staff.*

190 First-Year Seminar in Mathematics (1). F and S. An introduction in seminar format to several different topics in mathematics not otherwise part of the undergraduate program. Topics vary by semester, but will include both classical and recent results and both theoretical and applied topics. The goals of the course are to acquaint students with the breadth of mathematics and to provide opportunity for students interested in mathematics to study these topics together. All first-year students interested in mathematics (regardless of prospective major program) are welcome to register. This course may be repeated for credit. It will be graded on a credit/no-credit basis. *T. Scofield, T. Jager.*

221 The Real Number System and Methods for Elementary School Teachers (4). F and S. This course provides prospective elementary school teachers with background needed for teaching elementary mathematics. Both content and methodology relevant to school mathematics are considered. Topics covered include the real number system and its subsystems. Pedagogical issues addressed include the nature of mathematics and of mathematics learning and the role of problem solving and the impact of technology in the elemen-

tary school mathematics curriculum. Prerequisites: Meeting the Calvin admission requirement in mathematics. Not open to first year students except by permission of the instructor. *J. Koop, G. Talsma.*

222 Geometry, Probability, Statistics, and Methods for Elementary School Teachers (4). F and S. This course is a continuation of Mathematics 221. Both content and methodology relevant to teaching geometry, probability, and statistics in elementary school are considered. Topics covered include basic geometric concepts in two and three dimensions, transformational geometry, measurement, probability, and descriptive and inferential statistics. Pedagogical issues addressed include the place of geometry, probability, and statistics in the elementary school curriculum, use of computers in mathematics, and the development of geometric and probabilistic thinking. Prerequisite: Mathematics 221 or permission of the instructor. *J. Koop, G. Talsma.*

231 Differential Equations with Linear Algebra (4). F and S. Solutions and applications of first and second order ordinary differential equations. Laplace transforms. Elementary linear algebra. Systems of linear differential equations, numerical methods, and non-linear equations. Prerequisites: Mathematics 162 and experience in computer programming. *Staff.*

232 Engineering Mathematics (4). F and S. A study of topics from vector calculus, linear algebra, and statistics that are useful to engineers. Topics include vector fields, line and surface integrals, Gaussian elimination and matrix factorization, vector spaces, linear independence and basis, orthogonal projection, least squares approximation, descriptive statistics, probability, statistical inference, and regression. Students may not receive credit for this course and any of Mathematics 243, 255, or 261. Prerequisite: Mathematics 231. Not offered 2002-03.

243 Statistics (4). F and S. Data collection, random sampling, experimental design, descriptive statistics, probability, random variables and standard distribution, Central Limit Theorem, statistical inference, significance tests, point and interval estimates, and simple linear regression. The student is introduced

to the use of the computer in statistical computations and simulations by means of a statistical package such as MINITAB or SPSS. Prerequisite: Mathematics 162. *Staff*.

255 Applied Linear Algebra (4). S. Matrices, row operations, systems of linear equations, pivoting strategies, vector spaces, linear independence, dimension, orthogonality, determinants, eigenvectors, and eigenvalues. Emphasis on computations with matrices. Prerequisites: Mathematics 162 and either Computer Science 150, 155, 185, or permission of instructor. *M. Hanisch*.

261 Multivariate Calculus (4). F and S. A study of vectors and functions in two and three dimensions. Polar, cylindrical, and spherical coordinate systems. Partial derivatives, multiple integrals, vector functions, and vector analysis. Prerequisite: Mathematics 162. *Staff*.

321 Foundations of Geometry (3). S. Consideration of Euclidean geometry as an axiomatic system, introduction to non-Euclidean geometry, and the Poincare model. Prerequisite: A 200-level course. *G. Venema*.

325 History of Mathematics (3). S, alternate years. 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 focused on in each age. Prerequisite: A 200-level course in mathematics. *D. Laverell*.

329 Introduction to Teaching Secondary School Mathematics (2). S. This course introduces prospective teachers to important curricular and pedagogical issues related to teaching secondary school mathematics. These issues are addressed in the context of mathematical topics selected from the secondary school curriculum. The course should be taken during the spring preceding student teaching. The course may not be included as part of the major or minor in mathematics. Prerequisite: A 300-level course in Mathematics. *G. Talsma*.

333 Partial Differential Equations (4). F. Methods for solving heat, wave, and potential equations, Fourier series, orthogonal functions, Sturm-Liouville problems, separation of variables, Fourier transforms, and numerical methods. Intended for students in engi-

neering, the physical sciences, and applied mathematics. Prerequisites: Mathematics 231 and 261. *T. Scofield*.

335 Numerical Analysis (4). F. Analysis of errors in numerical methods, real roots of equations, approximations using polynomials, numerical integration, applications to differential equations, Lagrange and spline interpolation, least squares approximations, orthogonal polynomials, and applications. Also listed as Computer Science 350. Prerequisites: Computer Science 150 or 185 and two 200-level courses in mathematics. *M. Hanisch*.

343 Probability and Statistics (4). F. Probability, probability density functions; binomial, Poisson, and normal distributions; central limit theorem, limiting distributions, sample statistics, hypothesis tests, and estimators. Prerequisite: Mathematics 261 or 362. *J. Bradley*.

344 Mathematical Statistics (4). S. A continuation of Mathematics 343 including theory of estimation, hypothesis testing, non-parametric methods, regression analysis, and analysis of variance. Prerequisite: Mathematics 343. *T. Jager*.

351 Abstract Algebra (4). S. Set theory, relations and functions, equivalence relations; the integers, mathematical induction, and elementary number theory; groups, rings, fields, and polynomials. Prerequisite: Mathematics 361. *J. Turner*.

352 Advanced Linear Algebra (4). S, alternate years. Vector spaces, matrices, linear equations, linear transformations, determinants, polynomial algebras, eigenvalues and eigenvectors, inner-product spaces, spectral decompositions, and canonical forms for matrices. Prerequisite: Mathematics 361 or permission of the instructor. *D. Brink*.

359 Seminar in Secondary Teaching of Mathematics (3). F. A course in perspectives on, principles of, and practices in the teaching of mathematics on the secondary level. This course should be taken concurrently with Education 346. The seminar provides a forum for the discussion of concerns that develop during directed teaching. This course is part of the professional education program and may not be included in the major or minor in mathematics. *G. Talsma*.

361 **Real Analysis I** (4). F The real number system, set theory, the typology of metric spaces, numerical sequences and series, real functions, continuity, differentiation, and Riemann integration. Prerequisites: Two 200-level courses in mathematics. *T. Jager.*

362 **Real Analysis II** (4). S, alternate years. A continuation of Mathematics 361. Sequences and series of functions, functions of several variables, and Lebesgue integration. Prerequisite: Mathematics 361. Not offered 2002-03.

365 **Complex Variables** (4). S. Complex numbers, complex functions, integration and the Cauchy integral formula, power series, residues and poles, and conformal mapping. Prerequisite: Mathematics 261 or 362. *R. Wagstrom.*

381 **Advanced Logic** (4). F, alternate years. Topics include the formalization of propositional and quantificational logic. Taught jointly with the Philosophy Department. Also listed as Philosophy 381. *R. Pruim.*

385 **General Topology** (4). F, alternate years. 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: Mathematics 261 or 362. Not offered 2002-03.

390 **Independent Study**. F, I, and 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 department chair. *Staff.*

391 **Colloquium** (0). F and S. Meets weekly for an hour for the presentation of various topics in Mathematics, computer science, and related disciplines by students, faculty, and visiting speakers. Prerequisites: Two 200-level courses in mathematics. *J. Ferdinands, J. Turner.*

395 **Senior Thesis in Mathematics**. F, I, and 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 chair. *Staff.*

Medieval Studies

The interdisciplinary minor in Medieval Studies is designed to prepare students for study of the European middle ages, either as independent readers after their graduation from Calvin, or else as graduate students in any of the curricula in which Medieval Studies plays a role (Medieval Studies, History, Classics, Religion, Art History, Music, modern languages, etc.) The minor may be taken in conjunction with any major. Students interested should seek faculty advice as specified below.

GROUP MINOR IN MEDIEVAL STUDIES

History 263, 3 hours

Intermediate language course, 3-4 hours

Interdisciplinary 306, 3 hours

Elective courses, to be chosen from a field of interest other than the students current major:

History and Ideas:

Art 232, 233

Music 205

Philosophy 251, 322

Religion 243

History 262, 362

Literature and Language:

Latin 101, 102, 201, 202, 206, 391,

French 390

German 390

Spanish 351

English 302, 345

This minor requires a minimum of 18 regular semester hours (including a three-hour interim course), of which at least one course must be taken in History (History 263), and one course in Latin, a vernacular European language, Greek, or Arabic at the intermediate level. (Ordinarily this last requirement will be met with a course in literature, rather than conversational language study.) The remaining regular course requirements for the minor will be met by courses chosen from among those listed below to meet the interests and needs of the student. Elective courses must be chosen out of one of two fields of interest (“History and ideas” or “Literature and language”), with the understanding that this field is outside the student’s current major. (For example, a history or philosophy major will choose his/her elective courses from the “literature and language” field; a Classics major would choose his/her elective courses from the “history and ideas” field.)

Supervising and Advising

The group minor in Medieval Studies is administered by an interdepartmental committee. Members of the committee for 2002-03 are F Van Liere (History), K. Saupe (English), H. Luttikhuisen (Art), C. Stapert (Music), and M. Williams (Classics). Interested students should consult a member of the Medieval Studies Minor Committee for selection of specific courses for the minor.

COURSES

IDIS 306 **Introduction to Medieval Studies** (3). I, offered biennially. A classroom introduction to the skills that are specific to the interdisciplinary method of studying the Middle Ages. Although it is primarily intended for those students who have selected a minor in medieval studies, it is open to anyone with an interest in the Middle Ages, and it may also serve as a useful course for those who intend to go on to a graduate program in history, literature, or medieval studies.

Music

Professors D. De Young, D. Fuentes, J. Hamersma, H. Kim, C. Stapert (chair)
Associate Professors M. Moliterno, C. Sawyer, P. Shangkuan, J. Witvliet, J. Navarro
Instructors J. Kim, B. Kuykendal, R. Nordling

Within the liberal arts framework, the Music Department addresses itself to students majoring in music, to general students wishing to increase their understanding and enjoyment of music through study, and to the campus community. Students can major or minor in music, elect a fine arts program in education that includes music, fulfill a fine arts core requirement by taking one of the specified core courses, or take any course for which they are qualified. In addition, any qualified student may participate in one of the many performing ensembles or take private lessons. All students, as well as the general public, are welcome at the frequent concerts sponsored by the Music Department.

The Music Department offers a variety of programs of study leading to the Bachelor of Arts degree and two programs of study, which lead to the Bachelor of Music Education degree. Each of the programs builds on most or all of a central core of basic courses. All music majors must pass a keyboard proficiency test that includes playing a prepared piece, playing chord progressions from Roman numerals, harmonizing melodies, transposition, clef-reading, and score reading. (For details about level of difficulty and recommended schedule for taking the various parts of the test, consult with your advisor or the department chair.) Students planning to major in music, but have little or no piano background, should enroll in Music 100 (beginning piano lessons). All music majors are required to attend four concerts or recitals, per semester, in which they do not participate (see the department handbook for details).

D. Fuentes is the advisor for general, undecided students considering a major in

music. C. Stapert counsels undecided students considering a major or minor in music education. All transfer students interested in a major or minor in music must consult with J. Hamersma, at or before their first registration, to receive counseling into an appropriate sequence of music courses. Such students also must validate, during their first semester at Calvin, their transfer credits in keyboard harmony and aural perception. Those not meeting the minimum standards will be required to enroll in Music 213 or 214.

For admission to a program of study, students must complete Music 105, 108, 207, and 213 with a minimum grade of “C” (2.0) in each. Music 108 and 213 require a pre-college level of skill in the rudiments of music, aural perception and keyboard ability. Students desiring to enter one of the music education programs will be required to meet certain standards for admission. The proposed standards, a list of seven, can be found in the *Everything Book*, the Music Department Student Handbook. These standards must be met by the second semester of the sophomore year. Admission to the music education programs also requires that students pass a jury exam on his or her instrument or voice by the second semester of the freshman year. A one-half recital in the junior or senior year is also required of all music education students. An assessment test will be given in the first week of Music 105 for students considering a major in music. Students with any possible plans concerning further music study should enroll in Music 105 as their fine arts core course, for this class provides counsel about the various programs and the individual student’s qualifications for each. Another option for students with some musical background who desire core credit is Music 234. Students with more limited musical experiences may prefer Music 103, 106, or 236 as their core course elective in music. Music 238 earns core credit for elementary education, recreation, and social work students.

Not more than 8 semester hours 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. See fees on page 249.

MUSIC MAJOR (28 semester hours)*

- Music 105
- Music 108
- Music 213
- Music 205
- Music 206
- Music 207
- Music 208
- Music 305
- Music 308

*Note that these are basic music courses required of all music majors

Additional Requirements (9 semester hours)

- Private lessons (two semester hours)
- Ensemble (two semester hours)
- Music 237
- Music 202 or elective (in 1, 2, or 3 semester hour combinations)
- Music 180 (taken four times)

MUSIC MINOR (21 semester hours)

- Music 105

- Music 108
- Music 205
- Music 204
- Applied music (4 semester hours)
- One non-applied elective (3 hours)

MUSIC THEORY/COMPOSITION CONCENTRATION

**Basic music courses
Additional Requirements (20 semester hours)**

- Music 307
- Music 312
- Two from Music 315, 316, 317, 318, or 319
- Ensemble (eight semester hours)
- Music 180 (taken eight times)

APPLIED MUSIC CONCENTRATION

**Basic music courses
Additional Requirements (24 semester hours)**

- Ensemble (eight semester hours)
- Music 180 (taken eight times)
- Music 210, 220, 230, 240, 260, or 270 (16 hours)

MUSIC HISTORY CONCENTRATION

Basic music courses

Additional Requirements (20 semester hours)

Music 307
Music 312
An approved interim course
Music 390
Ensemble (eight semester hours)
Music 180 (taken eight times)

MUSIC IN WORSHIP MAJOR

Basic music courses

Additional Requirements (29 semester hours)

Foundational courses (15 hours)
Music 101, 111, 131, 141 (4 times, at least 2 in 111)
Music 235
Music 236
Music 237
Music 336
Specialty courses selected from the following:
(14 hours of which 6 must be applied music lessons)
Music 110, 210, 310
Music 130, 230, 330
Music 190, 290
Music 221
Music 195
Music 196
Music 197
Music 198
Music 238
Music 277
Music 312
Music 315
Music 316
Music 317
Music 318
Music 319
Music 337
Music 338
Music 350
Music 351

MUSIC IN WORSHIP MINOR

(19 semester hours)

Music 105
Music 108
Music 110 or 221 (taken twice)
Music 235

Music 236 or 336

Music 237

Two additional hours from Music 110, 130, 131, 190, or 221

SECONDARY MUSIC EDUCATION-VOCAL

Basic music courses

Additional Courses (41 semester hours)

Music 237
Music 238
Music 339
Two from Music 236, 307, 311-313, 315-317, or an approved interim
Music 195, 196, 197, and 198
Music 338
Music 350
Music 351
Music 110 or 210, 120 or 220 (taken twice)
Music 130 or 230 (taken four times)
Music 101, 111, 131, or 141 (taken seven times)
Music 180 (taken eight times)

Required Cognates

Philosophy 208 (Music 202)

History core

Literature core

Music 303

Music 359

Music 235 (Religion 237) highly recommended as second Religion

SECONDARY MUSIC EDUCATION- INSTRUMENTAL

Basic music courses

Additional Courses (42 semester hours)

Music 195
Music 196
Music 197
Music 198
Music 237
Music 238
Music 337
Music 339
Music 350
Music 352
One from Music 236, 307, 311, 312, 315, 316, 317, or an approved interim
Music 140, 150, 160, or 170 (taken four times)
Music 151, 161, or 171 (taken seven times)
Music 180 (taken eight times)

Music 160 (guitar, taken twice)
Music 110 or 120 (taken twice)

Required Cognates

Philosophy 208 (Music 202)
History core
Literature core
Education 303 (Music 303)
Music 359

SECONDARY EDUCATION

MUSIC MINOR (28 semester hours)

Music 105
Music 108
Music 213
Music 207
Music 205
Music 204
Music 237
Music 339
Music 110, 120, or 160 (guitar) (taken twice)
Music 130 or 230 (taken once)
Music 101, 111, 131, 141, 151, 161, or 171 (taken twice)

ELEMENTARY EDUCATION

MUSIC MAJOR (38 semester hours)

Music 105
Music 108
Music 213
Music 205
Music 206
Music 207
Music 208
Music 305
Music 237
Music 238
Music 110 or 120 or 160 (guitar) (taken twice)
Music 130 (taken twice)
Ensemble/choral (taken twice)
One elective (two semester hours)

ELEMENTARY EDUCATION

MUSIC MINOR (28 semester hours)

Music 105
Music 108
Music 213
Music 207
Music 205
Music 204
Music 237
Music 238

Music 101, 111, 131, or 141 (taken twice)
Music 130 (taken twice)
Music 110 or 120 or 160 (guitar) (taken once)

ELEMENTARY FINE ARTS GROUP MAJOR AND MINOR

All Fine Arts Group Majors must complete at least 36 semester hours of courses in Art, Music, and Communication Arts and Sciences. All minors must complete at least 24 semester hours of courses in these three areas. All majors and minors must take Art 215; Communication Arts and Sciences 214; and Music 238. In addition, students majoring in Fine Arts must complete a sequence of courses from two of these disciplines chosen in consultation with a fine arts education advisor. Students minor-ing in fine arts must complete a sequence of courses from one of these disciplines and some additional electives chosen in consultation with a fine arts advisor. Fine Arts Advisors: J. VanReeuwijk, Art; R. Buursma, Communication Arts and Sciences; and D. Topp, Music.

The secondary education music major programs lead to the B.M.E. degree and, although earning secondary teaching certificates, enable students to teach music at any level grades K-12. An elementary education major qualifies graduates to teach any subject in a self-contained classroom and to teach music in grades K-8. Prior to the teaching internship, students must have the approval of the department. Criteria for approval are found in the *Teacher Education Program Guidebook*, available in the Education Department.

COURSES

General and Core Courses

103 **Understanding and Enjoying Music** (3). F and S. This is an introductory course in historically-informed critical and perceptive listening to music. The relationship between musical style and culture is examined as is the forming of style by the manner in which the ingredients and elements of music are employed. Western art music is emphasized but also included in contemporary popular music and either pre-modern music or non-Western music. No previous musical training is required. *H. Kim, J. Kim, M. Moliterno, B. Kuykendal.*

105 Introduction to Music (3). F This course is a broad introduction to the art of music through the study of a wide variety of musical repertory. The course aims to teach students rudimentary technical vocabulary and stronger listening skills. The course also seeks to prompt students to think critically with a Christian mind about fundamental musical questions and issues and, in relation to those issues, to develop their understanding of selected pieces of music. Prerequisite: The ability to read music in at least one clef. *J. Hamersma, C. Stapert.*

106 American Music (3). F and S. A survey course of American folk and folk/popular music, both secular and sacred, beginning with the Anglo-American folk tradition and emphasizing folk music from the Afro-American tradition; folk hymns and urban gospel music; and country, blues, and rock, popular music. *Staff.*

203 Musical Performance in Western Culture (3). This course introduces students to the history of Western music and the role of musical performance in Western culture by means of intense, interdisciplinary study of works being prepared for performance by Calvin's performing ensembles. The course seeks to challenge students to bring historical, philosophical, and musical insight to the process of preparing works for performance. Prerequisite: Concurrent registration in Music 131, 141, 161, 171, or 181. Not open to first-year students. Not offered 2002-03.

204 Music History (3). S. A survey of the stylistic development and the cultural context of Western art music from the Classical period to the present. The class will study representative works of major composers and read contemporary documents related to the composers and the contexts of their music. *B. Kuykendal.*

236 History and Philosophy of Music in Worship (3). S. An introductory course in historically/theologically informed participation in worship music. The relationship between the character of texts and music and the cultural/theological context for them are examined. Congregational song, ranging from the Old Testament Psalms to contemporary praise and worship songs, is the focus of the course. Course requirements include reading,

tests, quizzes, listening to recorded music, leading worship in class, and church service attendance with written reports. No previous musical training is required. *J. Hamersma.*

Basic Courses

108 Music Theory I (4). S. A study of tonal harmony covering triads, inversions, non-harmonic tones, cadences, tonal theory, and dominant seventh chords. In addition to part-writing and analysis, this course includes ear training, sight-singing, and keyboard harmony. Prerequisites: Music 105 and passing the Theory Assessment Test. *B. Kuykendal.*

205 Music History and Analysis I (4). F A study, via listening, score study, and source readings, of music of Western civilization prior to 1750. After a brief introduction to world music, the course continues with study of musical thought in antiquity and the early Christian era, Gregorian chant, and the principal repertoires of polyphony through the Baroque period. Prerequisites: Music 105 and 108 or permission of the instructor. Students in music major or minor programs take this course concurrently with Music 207 and 213. *C. Stapert.*

206 Music History and Analysis II (4). S. A continuation of Music History I. This course is a study of music of Western civilization from 1750 to 1950. The course emphasizes the relationship of music to cultural and intellectual history, beginning with the impact of Enlightenment thought on music, continuing with the Romantic revolution, and concluding with the various 20th century continuations of, and reactions to, Romanticism. Prerequisites: Music 205 and 207 or permission of the instructor. To be taken concurrently with Music 208. *C. Stapert.*

207 Music Theory II (3). F A continuation of Music Theory I covering chromatic harmony. This course includes basic keyboard harmony analysis and part-writing. Prerequisites: Music 105 and 108. To be taken concurrently with Music 205 and 213. *B. Kuykendal.*

208 Music Theory III (3). S. A continuation of Music Theory II covering ultra-chromatic harmony, post-tonal techniques, set theory, and serialism. This course includes analysis, part-writing, ear training, and keyboard har-

mony. To be taken concurrently with Music 206. Prerequisites: Music 207 and 213. *D. Fuentes.*

213 Aural Perception (1). F. 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 through; also major, minor, and modal scales and melodic dictation. Harmonic perception involves triads and seventh chords in all positions in isolation and in chord progressions. To be taken concurrently with Music 207. Prerequisites: Music 105 and 108. *B. Kuykendal.*

214 Keyboard Proficiency (0). S. This course provides additional training in playing chord progressions, harmonizing melodies, transposition, clef-reading, and score reading in preparation for the keyboard proficiency test. Prerequisites: Music 207 and the ability to play at an intermediate level, approaching that required for playing a Clement sonatina. *Staff.*

305 Music History and Analysis III (3). F. The course emphasizes the issues that musicians face regarding expression and communication and focuses on the way these issues have been and are being redefined, answered in new ways, experimented with, and even dismissed since c. 1950. While the course focuses on art music, there is considerable attention given to film and popular music as well. Prerequisites: Music 206 and 208 or permission of the instructor. *D. Fuentes.*

308 Order, Meaning, and Function (3). * S. This course serves to integrate that which was learned in the music history and music theory sequences and to nurture Christian reflection on aesthetic and social issues in music. The first part of the course focuses on musical structure and the composer's activity of finding order in the world of sound and of the responsibility we all have as stewards of the gift of sound. The second part of the course turns attention to meaning in music, its functions in societies past and present, and questions concerning the nature and extent of its influence on people. In both parts of the course, specific pieces of music are studied in some detail. Prerequisites: Music 208 and 305. *C. Stapert.*

Advanced Courses

202 Aesthetics. See Philosophy 208 for the course description.

235 Christian Worship. See Religion 237 for the course description.

237 Conducting (2). F and S. A course in basic, general conducting, normally taken in the sophomore year. Prerequisite: Music 105 or sophomore standing with concurrent enrollment in Music 105. *J. Navarro.*

277 Congregational Song in Christian Worship (2). F. A study of the song of the church, with a focus on how psalmody has functioned in Christian worship and how hymnody has reflected theological issues in the church. Particular attention will be given to changes in church song brought by the sixteenth-century Reformation and by late twentieth-century ecumenical and charismatic influences. See Seminary 677. *E. Brink.*

307 Music Form and Syntax (3). F. A study of the most common ways composers set forth and work out musical ideas, including both the large-scale, and local aspects of musical form. Students will make inquiry into the syntactical meaning of various musical cues and gestures and sample various means of presenting a formal analysis, using basic reductive techniques, outlines, diagrams, analogy, and oral description in their assignments, and projects. Prerequisites: Music 206 and 208. *D. Fuentes.*

311 Vocal Polyphony of the Renaissance (3). *. A study of the vocal style of Palestrina. Exercises in modal counterpoint. Listening repertory of compositions. Prerequisites: Music 205 and 207. Not offered 2002-03.

312 Tonal Counterpoint (3). * S. A practical study of melodic writing and counterpoint, using the instrumental works of J.S. Bach as models. Prerequisites: Music 205 and 207. *D. Fuentes.*

315 Instrumentation (3). * F. A study of the technical capabilities of each instrument, as well as the particular qualities which make instruments fit or unsuitable for certain situations. Included among instruments to be studied is the synthesizer. Prerequisite: Music 208. *D. Fuentes.*

316 Orchestration (3). * S. A survey of the history of the orchestra and orchestration, and problems involved in writing for orchestra, band, and small ensembles. Prerequisite: Music 315. *D. Fuentes.*

317 Composition: Beginning (3). * F and S. Conducted in seminar format, students receive instruction and comments on their composition projects. At this level, students are required to write non-tonal music. Prerequisite: Music 208 or permission of the instructor. *D. Fuentes.*

318 Composition: Intermediate (3). * F and S. Private instruction in composition. Projects include a song, a composition for mixed ensemble, and two analysis papers. Prerequisite: Music 317. *D. Fuentes.*

319 Composition: Advanced (3). * F and S. Private instruction in composition. The main project for this course will be a string quartet, plus the analysis of a non-tonal string quartet. When time permits, students may choose additional projects. Prerequisite: Music 318. *D. Fuentes.*

336 Musical Leadership in Worship (3). S. Development of skills for planning and leading music in public worship services and a study of the theological and musical requirements for serving as pastoral musician in a worshipping community. *Staff.*

337 Instrumental Conducting (2). * F, even years. A course in advanced conducting techniques appropriate to bands and orchestras. Prerequisites: Music 237 and proficiency on a band or orchestra instrument. *D. De Young.*

338 Choral Conducting (2). * F, even years. A course in advanced conducting techniques appropriate to choirs. Students will be required to attend some rehearsals and performances outside of class hours. Prerequisite: Music 237. *P. Shangkuan.*

350 Vocal-Choral Pedagogy (3). *. The course is designed to provide practical study in vocal-choral training and rehearsal techniques, which help to develop singing skills in the classroom and in the ensemble. Lectures, demonstrations, and discussions focus on vocal techniques, which develop healthy singing and pleasing tone quality in children, adolescents, and adults. Course work includes listening, textbook readings, written reports

on field trips, and observations of off-campus choral ensembles. In addition, each student will prepare demonstrations of conducting and applying the vocal techniques required for all age levels. Not offered 2002-03.

351 Choral Literature and Materials (3). * F, odd years. A study of the philosophical, aesthetic, and practical problems involved in choosing significant and appropriate repertoire for study and performance in all levels of choral programs. Criteria for choosing quality music and pedagogical methods are examined. Attention is given to literature for particular voice development. Emphasis is placed on independent oral and written presentations. *P. Shangkuan.*

352 Instrumental Literature and Materials (3). * S, odd years. A study of the philosophical, aesthetic, and practical problems and issues involved in choosing appropriate music literature for study in elementary, junior high, and high school band and orchestra programs. Questions regarding the function of an instrumental ensemble in an educational institution, the definition of quality music, and how to teach for musical comprehension are dealt with along with acquainting the student with the literature and materials available for school use. Transcriptions and editions of wind repertoire are analyzed and evaluated. Emphasis is placed on independent oral and written reports and a final project. *D. De Young.*

390 Independent Study. *Staff.*

Music Education

195 String Methods (2). S, even years. Class lessons on all string instruments for the instrumental music education major. Emphasis is on the methods for teaching string instruments. Elementary playing skills are developed. *J. Kim.*

196 Brass Methods (2). F, odd years. Class lessons on all brass instruments for the instrumental music education major. Emphasis is on the methods for teaching brass instruments. Elementary playing skills are developed. *D. De Young.*

197 Percussion Methods (2). F, even years. Class lessons on percussion instruments for the instrumental music education major. Emphasis is on the methods for teaching per-

ussion instruments. Elementary playing skills are developed. *Staff.*

198 Woodwind Methods (2). S, odd years. Class lessons on all woodwind instruments for the instrumental music education major. Emphasis is on the methods for teaching woodwind instruments. Elementary playing skills are developed. *Staff.*

238 Music and Community (3). * F and S. An experiential analysis of the power of music in contemporary society. Students learn how music embodies their present life style by analyzing the various roles for music in their lives - roles played both by their consciously active choices and their unconsciously passive exposure to music in the various media. This analysis becomes especially significant as the students form their own unique community through interactive music activity. Through this experience they evaluate and perhaps also adopt convictions and practices from their own communities past and present for use in the future. Meanwhile, students also develop values, perspectives, and skills for leadership, especially to address social injustices through the use of interactive music. Developed originally for elementary education and music education students, this course also includes an alternate curriculum of readings designed for students majoring in other disciplines. *D. Topp.*

303 Introduction to Music Teaching (3). * F and S. An analysis of the teaching-learning process in the classroom. The course includes observation and participation in school activities and a laboratory experience to develop competence in the classroom use of audiovisual equipment. This course substitutes for Education 303 for secondary music education students and must be taken concurrently with Education 301. The in-school experience will be divided equally between traditional classroom and music teaching. *Staff.*

339 School Music (3). * F, odd years. A study of the philosophy, methods, and materials for teaching elementary and secondary school music. This course is required of Bachelor of Music Education majors and music education minors. *Staff.*

359 Seminar in Music Methods (3). S. A seminar taught in conjunction with Education 346 involving general problems of peda-

gogy, as well as the specific methods for teaching music in rehearsal and classrooms. The seminar provides a forum for the discussion of problems that develop during directed teaching. *Staff.*

Applied Music Lessons

010 Organ I (0). *J. Hamersma.*

020 Piano I (0). *H. Kim, Staff.*

030 Voice I (0). *M. Moliterno, C. Sawyer, Staff.*

040 Brasses I (0). *D. De Young, Staff.*

050 Percussion I (0). *Staff.*

060 Strings I (0). *J. Kim, Staff.*

070 Woodwinds I (0). *Staff.*

090 Guitar I (0). *C. de la Barrera.*

0XX Level I (0). Lessons for elective, non-music-major study at the most basic level of technique, musicianship, and literature; for remedial study for music majors; or for students not wishing credit. An audition is required for placement at this level. Lessons may be either class lessons or private lessons, at the discretion of the music faculty. Jury examinations are not required. However, upon recommendation of the teacher, an exit jury examination may be taken after any semester to qualify for a higher level of study. Three to six hours of practice each week are required. Recitals sponsored by the Music Department are not given by students at this level of study. Studio class attendance is required. No required Repertory Class (Music 180).

110 Organ II (1 or 2). *J. Hamersma.*

120 Piano II (1 or 2). *H. Kim, Staff.*

130 Voice II (1 or 2). *M. Moliterno, C. Sawyer, Staff.*

140 Brasses II (1 or 2). *D. De Young, Staff.*

150 Percussion II (1 or 2). *Staff.*

160 Strings II (1 or 2). *J. Kim, Staff.*

170 Woodwinds II (1 or 2). *Staff.*

180 Repertory and Studio Class (0). F and S. 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 applied music lessons.

190 Guitar II (1 or 2). *C. de la Barrera.*

1XX Level II (1 or 2). Lessons for qualified students, either as an elective or a requirement. A qualifying jury examination or an audition

is required for entrance to study at this level. All qualifying students majoring in music, including those intending to concentrate in music performance, begin with this course level. Jury examinations are required after every two semesters of study at this level. Upon recommendation of the teacher, a jury examination may be taken after each semester of study. Upon recommendation of the teacher, an exit jury examination may be taken after any semester to qualify for a higher level of study. Six hours of practice each week for each hour of credit are required. Recitals sponsored by the Music Department are not given by students at this level of study. Studio and Repertory Class (Music 180) attendance is required.

210 **Organ III** (1 or 2). *J. Hamersma.*

220 **Piano III** (1 or 2). *H. Kim, Staff.*

221 **Piano Accompanying in Worship** (1). Individual or class instruction in effective leadership of congregational singing from the piano. Also includes instruction in other kinds of accompanying that occurs in worship and some study of appropriate solo repertory. *N. Malefyt.*

230 **Voice III** (1 or 2). *M. Moliterno, C. Sawyer, Staff.*

240 **Brasses III** (1 or 2). *D. De Young, Staff.*

250 **Percussion III** (1 or 2). *Staff.*

260 **Strings III** (1 or 2). *J. Kim, Staff.*

270 **Woodwinds III** (1 or 2). *Staff.*

290 **Guitar III** (1 or 2). *C. de la Barrera.*

2XX **Level III** (1 or 2). Lessons for qualified students, either as an elective or a requirement. A qualifying jury examination or an audition is required for entrance to study at this level. Jury examinations are required after every semester of study. Required half or full recitals in the Bachelor of Music Education program are given at this level. Others, including non-music majors, wishing to qualify for playing a Music Department sponsored half or full recital also take this course. A full recital may be played only after a successful half recital. Upon recommendation of the teacher, a qualifying recital jury may be played after any semester. Six hours of practice each week for each hour of credit are required. Students preparing a full recital must take this course for two hours of credit for one or two semesters. Studio and Repertory Class attendance is required.

310 **Organ IV** (2 or 3). *J. Hamersma.*

320 **Piano IV** (2 or 3). *H. Kim.*

330 **Voice IV** (2 or 3). *M. Moliterno, C. Sawyer.*

340 **Brasses IV** (2 or 3). *D. De Young.*

350 **Percussion IV** (2 or 3). *Staff.*

360 **Strings IV** (2 or 3). *J. Kim, Staff.*

370 **Woodwinds IV** (2 or 3). *Staff.*

3XX **Level IV** (2 or 3). Lessons for students planning to continue to study music performance at the graduate level. A qualifying jury examination or a qualifying half recital is required for entrance to study at this level. A qualifying jury may be played only with the approval of the teacher. Required half and full recitals in applied music concentration are given at this level. Repertoire requirements and technical skills are geared toward performance of a full Bachelor of Arts concentrate recital. A recital-approval jury examination is required in the semester prior to the recital date. Jury examinations are required after every semester of study except at the end of the recital semester. Six hours of practice each week for each hour of credit are required. Students concentrating in performance are required to study at the 300 level for four semesters for 2-3 hours credit. Students preparing a full recital must take the course for 3 credit hours for two semesters. Studio and Repertory Class attendance is required.

Ensembles

Membership in ensembles is limited to Calvin students, except when there is a specific need and the non-student is not replacing a student.

101 **Meistersingers** (1). F and S. An ensemble devoted to singing a wide variety of literature suitable to the college male glee club. Open to the general college student. *J. Navarro.*

111A **Lyric Singers** (1). F and S. An ensemble of treble voices devoted to singing a wide variety of literature, both sacred and secular. Emphasis is given to three- and four-part singing, voice development, and preparation for performances. Open to the general college student. First-year women who wish to sing in a choir will normally be required to sing in the Lyric Singers. *Staff.*

111C **Women's Chorale** (1). F and S. A select ensemble of treble voices devoted to singing

a wide range of literature, both sacred and secular. Membership is maintained at a set limit and is open only to those who meet the demands of voice, sight reading, and choral musicianship. *P. Shangkuan.*

121 Small Ensemble (0-1). F and S. Faculty directed or coached vocal and/or instrumental ensembles performing representative music in their particular media. Within the limits of instrumentation and set ensemble size, membership is open to all students who meet the requirements of musicianship. One semester hour of credit is given if there is a minimum of three hours per week of faculty directed rehearsal. *Staff.*

131 Campus Choir (1). F and S. Study and performance of choral literature related to the practice of Christian worship throughout the history of the church and in many cultures. Emphasis on vocal and musical development, as well as on the theological, historical, and liturgical dimensions of selected choral repertoire. Open to all students who meet the requirements of voice and musicianship. *J. Witvliet.*

141 Capella (1). F and S. Representative works in the field of choral literature are studied and 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. Normally one year of experience in a college choir is required. *J. Navarro.*

151 Knollcrest Band (1). F and S. Representative works in wind literature are studied and prepared for concert performance. Meets three times weekly and is open to all freshman and sophomore students who wish to participate in a concert band. *D. De Young.*

161 Calvin Band (1). F and S. Representative works in wind literature are studied and prepared for concert performance. Meets four times weekly and membership is maintained at a set instrumentation. *D. De Young.*

171 Orchestra (1). F and S. 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. *R. Nordling.*

181 Oratorio Chorus. F and S. One hour of credit per year. The study of representative works of the great masters of choral writing with a view to public performance with orchestra. 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. *P. Shangkuan.*

Nursing

Professors M. Doornbos, C. Feenstra (chair)

Associate Professors M. Flikkema, S. Knoppers, B. Timmermans

Assistant Professors J. Baker, R. Boss-Potts, B. Feikema, B. Gordon, K. Vander Laan

Adjunct Faculty S. Dunn, T. George, S. Mlynarczyk,

K. Wallace, K. Wyngarden

The Calvin College Department of Nursing, in sharing the mission of Calvin College, seeks to engage in professional nursing education that promotes lifelong Christian service. Students will be prepared to be entry-level professional nurses. The objectives of the nursing curriculum are to assist the student to acquire the knowledge, the competencies and abilities, and the commitments necessary to practice as a professional Christian nurse. The context for nursing education includes the learning community of the college as well as the health care community, the professional nursing community, and the world community in which Christian service takes place. Health promotion and health protection with individuals, families and communities will be the major focus of the program. Challenging practicum experiences will occur in a variety of settings such

as communities, clinics, schools, hospitals, and rehabilitation centers. Graduates of the program will receive a BSN and be prepared to take the National Council Licensing Examination for Registered Nurses (NCLEX-RN). Satisfactory scores on the NCLEX-RN will enable a student to become a Registered Nurse (RN). The department of nursing expects to obtain approval from the Michigan State Board of Nursing and accreditation from the Commission on Collegiate Nursing Education (CCNE) prior to graduation of the class of 2004.

THE NURSING PROGRAM

The two-year, pre-nursing program requires nine courses in the natural and social sciences that provide the foundation for professional nursing. These courses include Biology 141, 205, 206, 207, Chemistry 115, Health Education 254, Psychology 151, 201, and Sociology 151. In addition twelve additional liberal arts courses are required.

The nursing major is a two year program normally taken in the junior and senior years. It consists of thirteen courses distributed over four semesters with 12 semester hours of course work in each semester. While students taking only nursing courses are full-time students during those four semesters, elective courses may also be taken during those semesters. There are no specific required interim courses.

Those interested in nursing are asked to indicate their interest at the time they begin their studies at Calvin so they will be counseled by academic advisors from the nursing department.

Admission Process

Applications to begin the program in September are due the preceding January 31. Thus, students on the normal schedule should apply in January of their sophomore year for entry into the program their junior year. Application forms are available in the nursing department office. To be eligible to begin the nursing program, a student must be of sophomore standing and have completed the nine required pre-nursing courses in the natural and social sciences. The natural science courses must have been completed within the past seven years. In order to be considered for admission to the program a minimum cumulative grade point average of "C+" (2.3) is required as well as a minimum grade of "C-" (1.7) in each of the natural and social science courses. Since enrollment in the final two

years, the practicum nursing years, is limited, admission is selective and completion of the pre-nursing courses does not assure acceptance.

Students who have transferred to Calvin from some other college or university will be considered Calvin students (rather than transfer students) if they will have completed two semesters of full time academic work at Calvin by the end of the semester in which they apply for admission. Students desiring to transfer to Calvin for their final two years, who have completed course work judged by the department to be equivalent to the nine required pre-nursing courses, will be considered for admission to the nursing program after qualified students from Calvin have been accepted into the program. Transfer students must also meet the core requirements described above. Applicants for admission, who are graduates of Calvin College, will be given equal consideration with current Calvin students. Calvin students and graduates will be given preference for admission over transfer students. Applicants who submit applications after the due date will be considered on a space available basis.

Transportation

Classroom and laboratory experiences take place on the Calvin College campus. Practicum experiences during the final two years occur at a variety of sites in the greater Grand Rapids area. Students are responsible for their own transportation to those settings. While students may be able to carpool with others for some practicum experiences, there will be occasions throughout the junior and senior years when personal transportation will be necessary.

Costs

Nursing students will be charged Calvin College tuition. In addition, a fee will be assessed for each nursing practicum course. The fee

for 2002-2003 will be \$900.00 per practicum course. Students normally take one practicum course in each semester of the two year program. This additional fee is considered when financial aid awards are made. Prior to beginning the nursing practicum courses, students will need to buy uniforms, name pins, a stethoscope, a blood pressure cuff, and take a professional rescuer's CPR course.

Coursework Required

Due to a revision in the Calvin College core that was implemented in the Fall of 2001, the pre-nursing courses listed below differ for students who were freshmen at Calvin in the Fall 2000 and those who were/are freshmen in the Fall of 2001 or later. If no specific course is noted for a category, students are free to select from the catalog choices for that category. The upper division nursing courses will be the same for all nursing majors.

Pre-nursing courses for students who were/are Freshmen at Calvin in the Fall, 2001 or later

| <i>First Year</i> | <i>Semester hours</i> |
|---|-----------------------|
| Biology 141, 205 | 8 |
| Chemistry 115 | 4 |
| Psychology 151 | 3 |
| Sociology 151 | 3 |
| English 101 | 3 |
| Research & Information Technology | 1 |
| Developing the Christian Mind (Interim) | 4 |
| Mathematics 143 | 4 |
| Arts core | 3 |
| Physical education core | 1 |

| <i>Second year</i> | <i>Semester hours</i> |
|--|-----------------------|
| Biology 206, 207 | 8 |
| Psychology 201 | 3 |
| Health Education 254 | 3 |
| Philosophical Foundations core | 3 |
| Literature core | 3 |
| Biblical or Theological Foundations core | 3 |
| History of the West and the World core | 4 |
| Rhetoric in Culture core | 3 |
| Physical education | 1 |
| Interim Elective | 3 |

Nursing Courses

| <i>Third Year</i> | <i>Semester hours</i> |
|-------------------|-----------------------|
| Nursing 307 | 4 |
| Nursing 308 | 4 |
| Nursing 309 | 4 |
| Nursing 327 | 4 |
| Nursing 328 | 4 |
| Nursing 329 | 4 |
| Electives | 0-8 |
| Interim Elective | 3 |

| <i>Fourth Year</i> | <i>Semester hours</i> |
|--------------------|-----------------------|
| Nursing 357 | 4 |
| Nursing 358 | 4 |
| Nursing 359 | 4 |
| Nursing 377 | 4 |
| Nursing 379 | 4 |
| Nursing 380 | 3 |
| Nursing 381 | 1 |
| Electives | 0-8 |

Note: The formal requirements for a Calvin College bachelor's degree include the following: Successful completion of 124 semester hours, completion of three interim courses of three credit hours or more, completion of the designated program of study and the designated core, and a minimum grade point average of 2.0 both overall and in the program of concentration.

COURSES

307 Theory: Community Based and Mental Health Nursing (4). F In this theory course, students will explore the theoretical foundations of the discipline of nursing, basic concepts of community based nursing, and mental health promotion and protection of individuals across the lifespan in the context of their families and communities. *M. Dornbos.*

308 Strategies: Community Based and Mental Health Nursing (4). F This course provides students with the opportunity to develop strategies for health promotion and health protection for use in community based nursing and mental health nursing. Students will develop basic competency in health assessment, communication, technical skills, nursing informatics, the nursing process, and critical thinking. Students will be introduced to basic principles of pharmacology as well as the various categories of psychotropic drugs. Each student will initiate a long-term partnership with a family in a selected diverse community. *B. Feikema, M. Flikkema.*

309 Practicum Community Based and Mental Health Nursing (4). F This practicum course provides the student with an introduction to community based nursing as well as the opportunity to implement strategies to promote and protect the mental health of persons across the lifespan. Students will assume basic roles of the professional nurse and utilize skills of assessment, communication, critical thinking, and nursing process to design and provide empirically based nursing care to individuals in a variety of clinical and community based settings. *Staff.*

327 Theory: Pregnant Women, Infants, Children, and Adolescents (4). S. This theory course will focus on health promotion and health protection practices for pregnant women, infants, children, and adolescents in the context of their families and communities. Concepts will include primary, secondary, and tertiary health protection and health promotion from the perspective of community based care. *B. Feikema, S. Knoppers.*

328 Strategies: Pregnant Women, Infants, Children, and Adolescents (4). S. This course provides students with opportunities to develop health promotion and primary, secondary, and tertiary health protection strategies in caring for pregnant women, infants, children, and adolescents. Students will develop knowledge and skills in health and cultural assessment, communication, nutrition, pharmacology, psychomotor activities, and nursing informatics systems related to care of pregnant women, infants, children, and adolescents.

329 Practicum: Pregnant Women, Infants, Children, and Adolescents (4). S. The student will utilize nursing strategies to promote and protect optimal health of pregnant women, infants, children, and adolescents in the context of their families and communities. Students will spend six weeks with pregnant women and infants and six weeks with children and adolescents in both acute care settings and a variety of community settings. Students will have opportunities to apply knowledge of health promotion and primary, secondary, and tertiary health protection strategies, utilizing the nursing process. The focus of the course is on engagement in clinical

decision making skills and problem solving in working with these clients. *Staff*.

357 Theory: Young, Middle, and Older Adults (4). F This course will focus on health promotion and health protection practices for young, middle, and older adults in the context of their families and communities. Concepts will include primary, secondary, and tertiary health protection and health promotion including community based care and role development. The student will learn about partnerships with adults to actively promote health as well as protecting health during times of acute and chronic illnesses. *M. Flikkema, K. VanderLaan*.

358 Strategies: Young, Middle, and Older Adults (4). F This course provides the student with opportunities to develop health promotion and primary, secondary, and tertiary health protection strategies in care delivery for adults. Students will develop knowledge and skills in health and cultural assessment of adults, pharmacology, communication, nutrition, psychomotor activities, and nursing informatics systems related to care of adult clients. *Staff*.

359 Practicum: Young, Middle, and Older Adults (4). F The student will utilize nursing strategies to promote and protect optimal health of adults in the context of their families and communities. Students will spend six weeks with young and middle age adults in a variety of community settings. Six weeks will also be spent with older adults in acute care settings. Students will have opportunities to apply knowledge of health promotion and primary, secondary, and tertiary health protection strategies, utilizing the nursing process. The focus of the course is on engagement in clinical decision making skills and problem solving with adult clients. *Staff*.

377 Theory: Community Focused Nursing and Leadership/Management (4). S This theory course is focused on health promotion/health protection for the community as client and leadership/management principles that are used by the professional nurse.

379 Practicum: Community Focused Nursing and Leadership/Management (4). S This course will afford students the opportunity to partner with communities as well as interdisciplinary groups of health care providers

for the purpose of promoting and protecting health. Partnerships with communities offer opportunities for the student to assist the community to develop the best health care possible for diverse cultural groups. Partnerships with interdisciplinary staff members allow for principles of management and leadership to be integrated into nursing practice. *Staff*.

380 Critical Reflections (3). S. (capstone course). This reflective course will lead the student into inquiry about the relationship between Christian faith and professional nursing. It will consider professional nursing issues in the light of a Reformed Christian worldview.

381 Cross Cultural Engagement with Families (1). S. This seminar course provides the student the opportunity to complete and to reflect on the long-term relationship with a family that began in the first semester of nursing courses. Long-term relationships can result in a deeper level of learning about how to work with families and with persons from different cultural backgrounds to promote and protect their health. Over the course of the semester, students will make the last three home visits to their long-term family. As the two years of visits to the family are completed, students will finish portfolios begun with the first family visit. During three, two-hour seminars with their faculty advisor, students will reflect on their experiences considering the role of the Reformed Christian nurse and the role of culture, values, and beliefs (both their own and those of their family) in health promotion and health protection with families in the community.

Courses for Hope-Calvin Program

362 Nursing Care of Psychiatric Clients (2). F and S. This course focuses on the nursing care of psychiatric clients, throughout the lifespan, and their families as they are responding to acute and chronic mental health alteration. Students will design nursing care that addresses psychological, social, spiritual, and physical needs of clients according to professional nursing standards. Learning activities will include presentation of theoretical principles, application case studies, focused writing assignments, and completion of independent study modules. Prerequisites: Nursing 315, 323, 331, and 354. *M. Dornbos, T. George*.

364 Nursing Care of Children (2). F and S. This course focuses on the nursing care of children and their families who are adapting to acute and chronic health alterations. Students will design nursing care that address the clients' physiologic, psychosocial, and spiritual needs according to professional nursing standards. Learning activities will focus on caring interactions with children and their families to achieve health. Prerequisites: Nursing 315, 323, 331, and 352. *S. Mlynarczyk, S. Knoppers.*

366 Caring Interventions for Psychiatric Clients (2). F and S. This course allows the student to provide holistic nursing care for psychiatric clients and their families in a variety of clinical settings. Learning experiences include laboratory work and supervised clinical. Prerequisites: Nursing 315, 323, 331, and 354. *T. George, K. Hengeveld.*

368 Caring Interventions for Children (2). F and S. This course allows the student to provide holistic nursing care for children and their families in a variety of clinical settings. Learning experiences include laboratory work and supervised clinical. Prerequisites: Nursing 315, 323, 331, and 354. *S. Mlynarczyk, S. Knoppers.*

411 Leadership and Management in Nursing Practice (1.5). S. This course focuses on theories of leadership and management in Nursing. The concepts of health care delivery, legal issues, accountability, problem solving, organizational communication, ethical dimensions, team building, group process, and management of resources will be discussed. Prerequisites: Nursing 315, 325, 326, 331, 354, 372, 362, 364, 366, 368, 429, 435, 437, and 459. *M. Scheerhorn.*

412 Leadership and Management Practicum (2.5). S. This course provides the student the opportunity to practice management skills in the clinical setting. The student will apply theories of leadership and management in nursing and put into practice the concepts of health care delivery, legal issues, accountability, problem solving, organizational communication, ethical dimensions, team building, group process, and management of resources. The student will have simulated learning activities and supervised clinical experience. Prerequisites: Nursing 315, 325, 326, 331, 354, 372, 362, 366, 368, 429, 435, 437, and 459. *Staff.*

429 Nursing Research (2). F. In this course students will explore the value of research and its relationship to nursing theory and practice. They will identify appropriate problems for nursing research and learn the steps of the research process. Critical analysis and application of current research findings are included. Emphasis is placed on the development of critical thinking, problem-solving, and professional ethics related to the research process. Prerequisites: Nursing 315, 323, 331, and 354. *C. Feenstra, K. Vander Laan.*

435 Nursing Care of Adults (5). S. This course focuses on the nursing care of adult clients and their families who are adapting to acute and chronic health alterations. Prerequisites: Nursing 315, 323, 331, and 354. *S. Etheridge, M. Flikkema, S. Dunn.*

437 Caring Interventions in Adult Nursing (5). S. This course will take place in the acute care setting where the student will care for adults with a variety of medical-surgical problems. Learning experiences include laboratory and supervised clinical practice. Prerequisites: Nursing 315, 323, 331, and 354. *J. Baker, S. Etheridge, M. Flikkema, K. Vander Laan.*

459 Nursing Practicum (2). I. This course provides students the opportunity to select a clinical area of their choice in which they provide individualized nursing care for clients. Learning experiences include theory and clinical practice with a preceptor, and individualized instruction. All shifts and working days may be used. Prerequisites: Nursing 315, 323, 331, 354, 362, 364, 366, 368, 372, 429, 435, and 437. *D. Sietsema, Staff.*

476 Nursing Care and Management of Clients in the Community (1.5). S. This course focuses on the nursing care in a community setting. Nursing strategies for the promotion and maintenance of health for groups, populations at risk, and communities will be emphasized. Students will complete a project that applies concepts of nursing research learned in a previous course. Prerequisites: Nursing 315, 325, 326, 331, 354, 362, 364, 366, 368, 372, 429, and 459. *C. Feenstra, B. Timmermans.*

478 Caring Interventions for Clients in the Community (2.5). S. This course is designed for the students to focus on nursing care for clients in the community with an emphasis

on health promotion and maintenance. Learning experiences include independent and supervised clinical practice in community health agencies. Students will plan, implement, evaluate, and manage care for groups of clients in the community. Prerequisites: Nursing 315, 323, 331, 354, 362, 364, 366, 368, 372, 429, 435, 437, and 459. *B. Feikema, B. Timmermans, Staff.*

484 **Perspectives in Professional Nursing** (2). S. This course will help students expand their understanding of Christian nursing and for-

mulate a philosophy of nursing that will shape their professional lives. The students will be expected to integrate what they have learned from their liberal arts education, their understanding of the history and culture of nursing, and their religious faith. Students will reflect on how their education and professional experiences can be used for personal growth and to influence society. Prerequisites: Nursing 315, 323, 331, 354, 362, 364, 366, 368, 372, 429, 435, 437, and 459. *B. Feikema, Staff.*

Off-Campus Programs

Calvin College offers semester-length programs for students who wish to study in the context of another culture or would benefit from a program that cannot be offered on campus. Calvin offers ten semester programs directed by members of the Calvin faculty, in Britain, Hungary, China, Honduras (2), Ghana, Spain, France, New Mexico, and Washington, D.C. The College also officially endorses or approves a number of other programs offered in conjunction with other institutions.

A student's overall qualifications and anticipated course credits are determined by a preliminary application, which must be approved prior to application to a particular program. Calvin-sponsored programs require at least sophomore standing and a minimum GPA of 2.5. The requirements for admission to non-Calvin programs vary, as indicated in the descriptions below.

Participants in Calvin-sponsored and endorsed programs maintain their eligibility for full Calvin financial aid. Those in approved programs may receive 50% of their Calvin financial aid.

Off-campus programs not sponsored, endorsed, or approved by Calvin College are available to students as independent studies; courses are treated as transfer credit and Calvin financial aid is not available.

An administrative fee of \$125 is charged to students participating in any endorsed or approved program or independent study. (This fee is included in the cost of Calvin-sponsored programs).

Additional information and preliminary application forms are available in the Off-Campus Programs Office in the Hekman Library.

Off-Campus courses are considered transfer work in which the credit will transfer, but the grades will not be calculated. The exceptions to this are courses taught by a Calvin faculty member or adjunct professor. These courses are graded like regular Calvin courses. Check with the Office of the Registrar for specific details regarding grading policies.

CALVIN-SPONSORED PROGRAMS

These courses are Calvin-sponsored programs, developed by and implemented through Calvin College.

Semester In Britain

Calvin College offers a study program each spring semester in cooperation with Oak Hill College, a theological college located in northern London. Calvin College students live in the college dormitories, take their meals in the dining room, and worship in daily chapel services with the Oak Hill students and staff. Calvin students take four courses during the semester — two with the Calvin College professor who directs the program and two courses selected from the offerings of Oak Hill College.

The courses offered by the director in 2003 are as follows: **216 Survey of British Literature** (4). This course surveys major works of British literature from the late eighteenth century into the twentieth century.

312 Studies in British Culture (4). A topical introduction to the political, historical, religious, artistic, and popular aspects of the culture of Great Britain. The course engages the culture through a combination of classroom and experiential learning. Class events will include guest speakers, field trips, excursions, and tours.

The courses from the Oak Hill curriculum (3 semester hours each) include offerings in Biblical and theological studies, church history, ethics, philosophy, and sociology.

To be accepted into the program, students must have completed one year of college studies with a minimum cumulative grade point average of 2.5. Selection of students is based on the appropriateness of the study to the applicant's college program, class level, recommendations, and interviews. Information is available from the Off-Campus Programs Office.

The director in 2003 is C. Pollard of the English Department.

Semester in China

Each fall, students in the Semester in China program study both traditional and modern China, experience life in its capital, Beijing, and explore other areas of this fascinating country. Living and studying at the Beijing Institute of Technology allows students to interact with Chinese and foreign students, take advantage of the nearby National Library, sports facilities, and parks, and visit important cultural and historical sites in and around the city. The program includes a 10-day class excursion to ancient capitals and other important historical sites. The program is composed of four courses. The first three are taught in sequence by D. Bays (History Department); the Chinese language course runs all semester and course level is determined by a placement test upon arrival. No previous knowledge of Chinese is required. The instructors are faculty members of the BIT and Chinese students serve as language tutors.

To be accepted, students should normally have completed at least one year of college studies with a minimum cumulative GPA of 2.5. The academic components are:

203 Traditional Chinese Civilization (4). An introduction to Chinese civilization from its earliest times to the end of the Ming Dynasty, including its religious and philosophical underpinnings. Includes 10-day trip to relevant sites.

204 Modern China (4). A study of the history of China from the 17th century through the Revolution, with emphasis on its collision with the West in the 19th century.

210 Emerging China (2). An examination of the development of China from the end of the Cultural Revolution to the present day, including China's place in the global economy, population growth, religion, and human rights issues.

Chinese Language (5). Level depends on placement examination at time of entrance. Pass/fail or graded.

Students who have already taken History 245, 246, or 371 may, with the permission of the Director of Off-Campus Programs, substitute one course at the Beijing Center for either of the first two courses. Courses at the Beijing

Center include art, literature, business, media, and government.

For further information, contact the Off-Campus Programs Office.

Semester in France

Students study in Grenoble, in southeastern France, on the campus of the Université Stendhal (Grenoble III) during the Interim and Spring semester. Students may take French 101, 102, 201, and 202 to complete the foreign language core-requirement or advanced language, literature, and culture courses. Advanced students will be incorporated into classes of the Centre Universitaire d'Etudes Françaises. Students in the advanced program take 15 semester hours, 14 of which are in French language, literature and culture. All students take a 1-credit course related to their cross-cultural experience, taught by the program director.

This program includes the interim. Normally, completion of French 215 and 216 is required to participate in the Semester in France's advanced program. The director for 2003 is O. Selles.

Development Studies in Honduras

Each spring semester Calvin College offers this program in Tegucigalpa, the capital of Honduras. This program is for students who want a first-hand experience living in a less developed country to prepare for further study or careers in third-world development or missions. The program seeks to integrate faith commitment with academic study. During the semester, students live with a Honduran family and attend classes on the campus of the Universidad Pedagógica Nacional. Development studies classes are taught by the program director, K. Ver Beek; the Spanish language courses are taught by members of the faculty at the Universidad.

To be accepted into this program, students must have completed one year of college studies with a cumulative grade point average of 2.5. Preference is given to juniors and seniors, especially Third World Development Studies students. The academic components of the program are as follows:

210 Exploring a Third World Society (3). A study of this history, economics, and politics

of Honduras as an example of a third-world country.

211 The Problem of Poverty (3). Analysis of development theories and major issues such as population and the environment and how Christian values can shape development theories.

212 Development Theory in Practice (3). Various perspectives on development practices from guests representing Christian and non-Christian development organizations, followed by a week of living with a Honduran family to see the impact of development in a community.

SPAN XXX Spanish Language Study (3-6). Course choice depends on previous course work. See the chair of the Spanish Department for advice.

Semester in Ghana

Program participants live on the campus of the University of Ghana, in Legon, near Accra, Ghana's capital and study at the University's Institute of African Studies. The semester begins and ends with sessions at the Akrofi Christaller Centre for Applied Theology and Mission. Students take two courses with the program director, R. Hoksbergen, a course in the local language (Twi), and at least one of two courses taught by staff at the University of Ghana.

The courses offered by the program director are: **201 Introduction to Third World Development (3).** This course will examine the realities of contemporary life in Ghana as compared to other low-income countries. It will also study competing theoretical perspectives on development and change, particularly as they relate to Ghana's development experience since WWII. The course addresses cultural, social, political, religious, economic, and environmental elements of people's lives in Ghana and West Africa generally.

312 The Culture and People of Ghana and West Africa (4). A multi-disciplinary course aimed at an appreciation of the rich and diverse culture and history of the peoples of West Africa. Excursions to sites such as slave forts, the Fante homeland, the historic city of Kumase, and the Museum of Ghana are included.

Courses offered by staff of the University of Ghana are:

100 Twi Language (2). An introductory course in the dominant local language, designed to help students communicate on a basic level as they interact with the people around them.

217 African Literature and Drama (3). An introduction to African oral literature and drama. Study of dramatic themes and trends will focus on those related to colonial rule and the post-independence period.

253 The Religions of West Africa (3). A study of the African worldview and its relationship to belief systems, rituals, and social organization. The interaction among African traditional religions, Islam, and Christianity will also be explored.

To be accepted into the program, students must have completed one year of college studies with a minimum cumulative grade point average of 2.5. Selection of students is normally based on the appropriateness of the study to the applicant's college program, class level, and recommendations.

Spanish Studies in Honduras

During the last two weeks of August and the fall semester, Calvin offers an orientation and advanced Spanish program for majors and minors in Tegucigalpa, Honduras. Intensive study of Spanish is combined with an exploration of the meaning of faith in a third-world setting. Students live individually with Honduran families, participate in organized excursions, and attend classes on the campus of the Universidad Pedagógica. Students earn 14-17 semester hours of credit in courses such as advanced conversation, linguistics, Latin American literature and culture, and third world development. Prerequisite: Spanish 301. For further information, contact E. Miller or M. Bierling of the Spanish Department, or the Off-Campus Programs Office.

The academic components of the program are as follows:

205 Poverty and Development (3). Analysis of development theories and major issues such as population, the environment, and how Christian values shape theory. Includes several field trips.

302 Advanced Conversation (3). Intended to increase fluency in spoken Spanish through vocabulary acquisition, readings, conversation, debates, and oral presentations.

313 Latin American Culture (3). An examination of the history and culture of Latin American social, political, and religious institutions through readings, discussion, oral presentations, guest speakers, and field trips.

315 Cross-Cultural Engagement in Honduras (1). F. A required course that synthesizes the many cross-cultural experiences of the semester abroad through interviews, discussion, and reflection. Final paper required.

329 Introduction to the Study of Hispanic Literature (3). Introduction to the major movements and genres of Hispanic literature. Students learn how to read and evaluate literature in Spanish through short prose, drama, and poetic texts, and sharpen their skills in critical writing and literary analysis. Should be taken before or concurrent with Spanish Studies in Honduras 333.

333 Survey of Literature of Latin America II (3). An overview of the literary masterpieces of Latin America from Modernism to the present. Discussion centers on selections from major works and their relationship to society and culture then and now.

340 Spanish-English Linguistics (3). An examination of the differences between English and Spanish, particularly those involving sound, structure, and vocabulary, in order to improve the students' communication skills and to understand the errors made by those learning a second language.

342 Language and Culture in Honduras (2). SS.

364 Central American Authors (3). An in-depth study of major Central American authors and works. The course requires the reading of several complete texts and a major research paper. Prerequisites: Spanish Studies in Honduras 329 and one survey literature course (Spanish Studies in Honduras 330-333).

393 Ethnographic Study (2). Students are placed in an agency, school, or business in Tegucigalpa where they observe and/or participate. Journals and final presentation required. Prerequisite: Permission of the Director.

All courses are taught in Spanish and count towards a Spanish major or minor.

Semester in Hungary

Calvin College offers a study program each fall semester in cooperation with the Karoli Gaspar Reformed University in Budapest, the Budapest University of Economic Sciences (a university for the social sciences and humanities), and the Technological University of Budapest. The institutions are located on the Danube in the heart of Budapest. Two courses taught by the program director, and a 2-hour pass/fail Hungarian language course are required; the remaining two courses are chosen from a wide variety of core and elective courses in history, literature, sociology, psychology, economics, religion, and business from the cooperating institutions. E. Van Der Heide, Economics and Business Department, will be the director of the Fall 2002 semester.

The courses offered by the program director are as follows:

301 Economics and Development in Hungary (3). What are economic issues and why are they so important for understanding Hungary and Eastern Europe today? This course will begin by teaching the basics of economic study and economic systems and then explain how countries like Hungary have made the transition from planned to market economies. The course will deal with challenges facing countries as they work to develop and increase living standards. (Equivalent to Economics 151 or, with additional readings, Economics 337).

312 Studies in Central European Culture (4). A topical presentation of East Central Europe — politics, religion, art and music, and science — through guest speakers, readings, and excursions.

To be accepted into the program, students must have completed one year of college studies with a minimum cumulative grade point average of 2.5. Selection of students is based on appropriateness of the study to the applicant's college program, class level, interviews, and recommendations. Information on the program is available from E. Van Der Heide (Economics and Business Department) or the Off-Campus Programs Office.

Semester in New Mexico

Calvin College offers a multicultural study program each fall semester in New Mexico on the campus of Rehoboth Christian School.

The goal of this program is to provide students with a cross-cultural learning experience by means of special -focus sections of courses from Calvin's Liberal Arts core and Education courses. This program provides students with an exceptional opportunity to explore a Native American culture.

Ordinarily, students must have achieved sophomore status with a GPA of at least 2.5. Those taking Education courses must have been admitted to the Teacher Education program prior to the submission of the program application. The academic components of the program are as follows:

151 Introductory Geology, with special focus on the geological features of the Southwest (4). An introductory study of the geological structures of the earth, using the unique geological features of the Southwest.

154 Introduction to Art, with special focus on Native American art (3). A special survey of art, artists, and art criticism in the context of Native American art.

218 People and Cultures of the Southwest (3). An anthropological study of the Southwest as a major world culture area.

301/303 Psychology of Education and Introduction to Teaching (7). Education 301 and 303 — an introduction to educational psychology, with an emphasis on cultural impact on the learning process, with classroom observation and participation.

345 Directed Teaching: Elementary (12). Full-time supervised practice teaching at Rehoboth Christian and other local schools. In addition to good standing in the teacher education program, applicants must have achieved passing scores on the Michigan Basic Skills Test and have appropriate recommendations.

358 History of the American West (3). An introduction to the major periods and themes of frontier and western history, from the Indian and Spanish eras to the present day.

Information on the New Mexico program is available from L. Stegink, Director, for fall, 2002, or from the Off-Campus Programs Office.

Study in Spain

Calvin offers introductory and advanced Spanish language programs during the Interim and spring semester in Denia, Spain. Students live with Spanish families and attend classes on the campus of the local university.

Students in the introductory program are able to fulfill Calvin College's foreign language requirement and earn nineteen semester hours of credit by successfully completing Spanish 100 (Spanish Culture), 101, 102, 201, and 202. The language classes cover grammar, conversation, reading, and writing; the Spanish culture course provides an introduction to fundamental aspects of life in Spain. Because enrollment is limited, preference in admission to the Core Program is given to juniors and seniors.

The prerequisite for all courses in the Advanced Program is Spanish 301. The courses offered in 2003 are:

302 Advanced Conversation (3). Intended to increase fluency in spoken Spanish through vocabulary acquisition, readings, conversation, debates, and oral presentations.

312 Contemporary Spain (3). Taught during the Interim. An examination of the history and culture of Spanish social, political, and religious institutions through study of both literary and non-literary sources. The course also incorporates discussion of issues currently facing the Spanish people.

330 Survey of Literature of Spain I (3). Major writers and movements in Spanish literature from the Middle Ages through the Golden Age within their cultural-historical context.

336 Art History (3). A study of the art and architecture of Spain from prehistoric times through the present.

341 Advanced Grammar II (3). Focused on understanding and improving accuracy in those areas of grammar that prove especially difficult for non-native speakers.

367 Spanish Literature of the Golden Age (3). The literature of the sixteenth and seventeenth centuries in poetry, drama, and the novel, and including literature of the Counter-Reformation.

393 Independent Ethnographic Study (2). Prerequisite: Permission of the Director.

For further information, contact C. Slagter (Spanish Department), Program Director for 2003, or the Off-Campus Programs Office.

Semester in Washington, D.C.

Calvin offers a semester-long program (the Henry Semester) in Washington, D.C., each spring in cooperation with an established internship program. Participants combine a semester-long internship with seminar course work - a unique opportunity to combine academic study with first-hand experience of work and life in the nation's capital. To be accepted into the program, students must have at least second-semester sophomore standing and a GPA of 2.5. In addition, students must have either completed Political Science 101 or have received the consent of the instructor. Students are encouraged to enroll in Political Science 341, a one-hour preparatory course offered in the fall semester. Information on the program is available from the Political Science Department. The director for 2003 is W. Stevenson.

342 Field Research and Experiential Learning in Washington, D.C. (3). Students will be assigned to different subgroups based upon their particular internship placement (e.g., legislative, executive, judicial, interest groups, civil society), with assigned readings and discussion varying for each subgroup. May be credited as an elective or as a departmental credit when accepted by individual departments.

343 Integrating Faith and Public Life (3). A course that addresses a particular substantive issue related to public life. The particular content of this course will be selected by the instructor on site, and thus will vary from year to year. May be credited as an elective or as a departmental credit when accepted by individual departments.

344 Internship in Washington, D.C. (8). An internship experience, normally consisting of a four-day work week in a professional setting, in the student's major field of concentration. Credit toward a departmental major is granted at the discretion of each department.

Note: Students planning on participating in the Semester in Washington, D.C. are strongly encouraged to take Political Science 341 during the Fall semester.

CALVIN-ENDORSED AND APPROVED PROGRAMS

These programs are offered in conjunction with other institutions, but are officially endorsed or approved by Calvin. Students participating in endorsed programs may receive full Calvin financial aid for the program. Those in approved programs receive 50%. See Financial Aid Office or the Off-Campus Programs Office for a list of programs in each category. A few approved programs do not qualify for Calvin financial aid, as noted in their program descriptions.

American Studies Program

The American Studies Program in Washington, D.C., is a semester-long internship/seminar program for upper division students in most majors who are interested in having on-the-job experiences and in exploring current national and international issues with Washington professionals. The program is sponsored by the Council for Christian Colleges and Universities, of which Calvin College is a member, and is supervised by the program staff in Washington. Applicants should be juniors or seniors, should have a grade point average of 2.75 or higher, and show promise of benefiting from the internship and seminar experience.

Information on this program can be obtained from C. Smidt, Political Science Department, or the Off-Campus Programs Office.

Applicants to this program are not eligible for Calvin financial aid.

AuSable Institute of Environmental Studies

This institute is sponsored by Calvin College and other evangelical Christian colleges and offers course instruction and internships in environmental studies. In the forests of northern Michigan, on the shores of Puget Sound in Washington or the Chesapeake Bay in Virginia, in India, or in Kenya, students take courses which provide academic content, field experiences, and practical tools for stewardship of creation's resources. Students who also complete work for a bachelor's degree at a liberal arts college approved by the Institute may earn certificates as environmental analysts, land resource analysts, water resource ana-

lysts, naturalists, and stewardship ecologists.

Courses are offered during the January interim, and May-August. Course listings by campus are available at the AuSable website, www.ausable.org. All course and internship offerings are detailed in the official bulletin of the Institute, which is available from the AuSable advisor, D. Warners, of the Biology Department.

Course enrollment forms and financial aid applications are available from the AuSable advisor, D. Warners, of the Biology Department.

Budapest Semester(s) in Mathematics

The Budapest Semester(s) in Mathematics program provides a unique opportunity for mathematics and computer science majors in their junior or senior years may spend one or two semesters in Budapest studying under the tutelage of eminent Hungarian scholar-teachers. The instructors of Budapest Semesters in Mathematics are members of Eotvos University and the Mathematical Institute of the Hungarian Academy of Sciences. In addition to offerings in mathematics, courses are offered in Hungarian language, history, and culture. Students will be expected to take three or four mathematics courses and one or two intercultural courses each semester.

Early applications are encouraged; the first 25 qualified applicants will be accepted to participate in the program as their applications are completed. All remaining applications will be notified shortly after the application deadline. For additional information see <http://www.stolaf.edu/depts/Mathematics/Budapest/or> R. Pruijm, of the Mathematics Department.

Chicago Semester (formerly Central University Programs)

In cooperation with Central University (formerly Central College), Calvin College offers semester and year-long, endorsed programs of foreign language study in Austria and the Netherlands in a variety of subjects. Those who need language review may take a month-long intensive course in the country of their program before the beginning of the fall semester. For more information, contact the Off-Campus Programs Office. Central also offers

programs in Britain, Wales, France, Mexico, and Spain. These programs are designated as 'independent study' programs for purposes of financial aid consideration.

Chicago Metropolitan Center Program

The Chicago Semester is sponsored by Calvin College together with Central, Dordt, Hope, Northwestern, and Trinity Colleges and is administered by Trinity Christian College. It offers qualified juniors and seniors with a cumulative grade point average of at least 2.5 the opportunity to gain a semester's credit through studying and working in Chicago. Students participate in seminars at Chicago Semester's Loop Center and spend four days a week in an internship related to their career interest and academic major.

All students must take the Field Internship and select two of the four seminars available. For more information, contact the Off-Campus Programs Office.

Fine Arts Seminar (3). F and S. An investigation of urban cultural life as reflected in the arts of Chicago. Data for exploration is gathered by attendance at plays, concerts, movies, and art galleries. This primary information is processed through readings, lectures, and classroom discussion. Meets fine arts core.

Metropolitan Seminar (3). F and S. A broad survey of the major issues in the life of the metropolitan community of Chicago. This seminar examines the economic, educational, political, and social welfare systems and the meaning of living in the urban environment.

Values and Vocations Seminar (3). F and S. An exploration of the values dimension in life: What one lives for and why. Emphasis is placed on helping students determine their personal structure of values in the light of biblical norms.

History of Religion and Society in Urban America (3). F and S. An examination of religious social engagement in America from the colonial era to the present, focusing on the city. Topics include religious responses to the market economy, race relations, gender roles, and the church/state relationship.

Field Internship (9). F and S. Students enrolled in the Chicago Semester program have

a large number of placements available to them. Students may select internships from a range of organizations, which include art centers, banks, businesses, hospitals, media centers, newspapers, publishing houses, mental health clinics, churches, social work agencies, museums, libraries, and zoos. The student interns are supervised on the job by Chicago Semester staff members.

(F and S). *Student teaching opportunities* are available for Education students. See M.J. Louters, Education Department, for further information.

(S). *Internships for social work students* are available to students approved by the Sociology and Social Work Department. See B. Hugen, Sociology and Social Work Department, for further information.

China Studies Program

Participants in the China Studies Program, administered by the Council for Christian Colleges and Universities, live and study for a semester, either in the fall or spring in Xi'an and Shanghai.

Applicants must be juniors or seniors, have a 2.75 or higher cumulative grade point average, and must receive a recommendation from the academic dean's office. For more information on this program, contact the Off-Campus Programs Office.

Applicants to this program are not eligible for Calvin financial aid.

College Year in Athens

College Year in Athens (CYA) offers a curriculum of university-level courses taught in English and concentrating on Ancient Greek Civilization and East Mediterranean area studies. Ancient Greek and Latin, as well as modern Greek, are available at several levels of expertise. Students may study at CYA for one or both semesters of the academic year. Located in downtown Athens, this non-profit educational institution offers excellent library resources and housing. Field trips to sites of archaeological importance are integrated into each term's offerings.

The courses most suitable as substitutions for courses in the classics major are Art and Ar-

chaeology of Greece to the Roman Period (equivalent to Classics 221); Beginning Ancient Greek (Greek 101-102); advanced reading courses in Greek authors (Greek 202-302), Advanced Latin (Latin 205-304), and the Epic Tradition and Attic Tragedy (Classics 211). In addition, many CYA courses should meet core requirements in history, fine arts, literature, global studies, and cross-cultural engagement.

For further information, students may contact K. Bratt, Classics Department, or the Off-Campus Programs Office.

Contemporary Music Program

New in the fall of 2001, the Contemporary Music Program is administered by the Council for Christian Colleges and Universities, of which Calvin College is a member. Program participants live together on Martha's Vineyard (Massachusetts) and follow either the Artist track or the Executive track. The Artist track is tailored to students considering careers as vocalists, musicians, song writers, recording artists, performers, producers, or recording engineers. The Executive track is designed for business, arts management marketing, communications, and other majors interested in possible careers as artist managers or agents, recording company executives, music publishers, etc. Students explore creativity and the marketplace from a Christian perspective as they work together to create and market a recording of original music and earn 16 semester hours of credit.

Students should be juniors or seniors with a grade point average of 2.75 or higher and be recommended by the program advisor, W. Romanowski. For further information, see the Off-Campus Programs Office.

Daystar University

Under the auspices of the Christian College Consortium, a limited number of Calvin students each semester join over 1,900 Africans from more than 20 African countries who are studying at Daystar University, located in Kenya, East Africa. Daystar University is the only accredited evangelical Christian liberal arts college in all of sub-Saharan, English-speaking Africa.

Daystar's programs of study include: Accounting, Bible and Religious Studies, Business Administration and Management, Christian Ministries, Communication, Community Development, Education, Economics, English, Marketing, Music, Psychology, and Peace and Reconciliation Studies. Also available are courses to introduce the student to the history, culture, literature, politics, art, music, and religions of Africa.

Students may also tour Nairobi, visit wildlife centers and game reserves, participate in a variety of worship services, and reside for a time with a Kenyan family.

All instruction is in English and is offered both in the fall and spring semester. However, applications for *either* semester are due January 15.

Preference is given to applicants who will be juniors or seniors during the time they would be studying at Daystar and who have at least a 2.75 grade point average.

For further information, contact G. Monsma, Economics and Business Department, or the Off-Campus Programs Office.

Dordt Netherlandic Studies Program

Three weeks of intensive Dutch language classes, followed by 12 weeks of courses at the Gereformeerde Hogeschool in Zwolle. Offered in the Spring semester only. Contact the Director of Off-Campus Programs at Dordt, K. Buusema, (kbussema@dordt.edu), or Calvin's Off-Campus Programs Office.

Global Stewardship Studies Program

At its two program sites (Belize and New Zealand), the GSSP offers courses dealing with ecosystems, community development, cultural anthropology and literature of the local culture. Internships (1-4 sem. hrs.) are possible. Both programs are offered in both the Fall and Spring semesters; students may not earn credit at both sites. Program brochures are available at the Off-Campus Programs Office.

Hong Kong Baptist University

The Hong Kong Baptist University offers courses in a variety of fields at its three Kowloon campuses. Students may choose

from regular courses in business, humanities, communications, science, and social sciences or enroll in special courses in Mandarin or Cantonese Chinese language study or in a special sociology course designed for non-Chinese students. For more information, contact the Off-Campus Programs Office.

Japan Center

Students may choose to spend fall semester, spring semester, or summer semester at the Japan Center for Michigan Universities in Hikone, near Kyoto, Nara, and Osaka. Each semester courses are offered in both Japanese language and Japanese culture. In addition, students take two other courses related to Japan. The course offerings vary each semester, but include topics such as Japanese Economic Practices, Environmental Issues in Japan, Japanese International Relations, etc. The culture courses satisfy some core requirements.

Students may either live in the dormitory or stay with a Japanese family for the entire semester, or live in the dorm but stay with a Japanese family on some weekends. See L. Herzberg, Professor of Japanese and Chinese, for further details.

Jerusalem University College

This program is sponsored by Calvin College and other evangelical Christian Colleges. The campus is located on historic Mount Zion. From the Jerusalem campus, the students also travel to many parts of Israel and the West Bank to study biblical texts in their original settings. Students can select courses from areas in Biblical Studies, Middle Eastern Studies, Archaeology, History, Geography, and Hebrew Studies. For more information, contact K. Pomykala, Religion and Theology Department, or the Off-Campus Programs Office.

Latin American Studies Program

Students of member colleges of the Council for Christian Colleges and Universities have the opportunity to live and learn in Latin America through the Latin American Studies Program, based in San Jose, Costa Rica. The program introduces students to as wide a range of experiences through the study of the

language, literature, culture, politics, history, economics, ecology and religion of the region. Living with a Costa Rican family, students experience and become a part of the day-to-day lives of typical Latin Americans. Students also take part in a service opportunity and travel for three weeks to nearby Central American nations. Students participate in one of four concentrations: Latin American Studies (offered both fall and spring terms); Advanced Language and Literature (limited to Spanish majors and offered both fall and spring terms); International Business and Management (offered only in fall terms); and Tropical Sciences (offered only during the spring terms). Students in all concentrations earn 16 semester credits. For further information about Spanish program, see E. Miller or M. Bierling, of the Spanish Department. For all others, see the Off-Campus Programs Office.

Los Angeles Film Studies Center Program

The Los Angeles Film Study Center (LAFSC) Program, offered in both the fall and spring semesters, is administered by the Council for Christian Colleges and Universities of which Calvin College is a member. The Los Angeles Film Studies Center is designed to train students of Council institutions to serve in various aspects of the film industry with both professional skill and Christian integrity. Students live, learn, and work in the LA area near major studios. The curriculum consists of two required seminars focusing on the role of film in culture and the relationship of faith to work in this very influential industry. In addition, students choose two elective courses from a variety of offerings in film studies. Internships in various segments of the film industry provide students with hands-on experience. The combination of the internship and seminars allow students to explore the film industry within a Christian context and from a liberal arts perspective. Students earn 16 semester hours of credit.

Applicants must be juniors or seniors with a 2.75 or higher cumulative grade point average who provide evidence of academic, creative, and personal maturity in their application, recommendations, and interview with the LAFSC Director. Further information may

be obtained from W. Romanowski, of the Communication Arts and Sciences Department or the Off-Campus Programs Office.

Middle East Studies Program (MESP)

Participants in the Middle East Studies Program, administered by the Council for Christian Colleges and Universities, live and study for a semester, either in the fall or spring, in Cairo, Egypt. This program allows Council students to explore and interact with the complex world of the modern Middle East. The interdisciplinary seminars give students the opportunity to explore the diverse religious, social, cultural, and political traditions of Middle Eastern people. In addition to seminars, students study the Arabic language and work as volunteers with various organizations in Cairo. Through travel to Israel, Palestine, Jordan, Syria, and Turkey, students are exposed to the diversity and dynamism of the region. MESP encourages and equips students to relate to the Muslim world in an informed, constructive, and Christ-centered manner. Students earn 16 semester hours of credit.

Applicants must be juniors or seniors, have a 2.75 or higher cumulative grade point average, and must receive a recommendation from the academic dean's office. For further information, consult D. Howard, of the History Department, or the Off-Campus Programs Office.

Oregon Extension Program

This cooperative program, operated by Houghton College, is conducted in Ashland, Oregon, during the fall semester. About thirty students become part of a small intellectual community in a rural setting. Instruction is personalized in tutorials or small groups and focuses on Christian reflection on contemporary life and thought. Students study one course in each of the following categories: Contemporary Issues, Social Thought, Human Stories, and Living Faith. All students take the course in composition and rhetoric. More than half of the academic work must be outside student's primary field of interest. Credit is issued by Houghton College.

Applicants ordinarily should plan to take the program in their junior or senior year, have

a grade point average of 3.0 or higher, and show promise of benefiting from tutorial and small group study and discussion. Details about the program are available from D. Diephouse, Academic Dean, or the Off-Campus Programs Office.

Honours Programme, CMRS - Oxford

The Honours Programme, CMRS - Oxford, is a partnership program with the Centre for Medieval and Renaissance Studies, affiliated with Keble College of the University of Oxford. It is administered by the Council for Christian Colleges and Universities. This program is interdisciplinary in scope and provides course options in a wide array of subjects including Architecture, Art, Art History, European History, Greek, Latin, European Languages, Literature, Drama, Classics, Philosophy, Political Science, History of Science, and Biblical and Religious Studies.

The program includes the following components:

| | |
|---------------------|---------|
| Private Tutorials | 8 hours |
| Integrative Seminar | 4 hours |
| Interactive Seminar | 4 hours |

Applicants must be juniors or seniors and must have a cumulative grade point average of at least 3.5. For further information, students may contact K. Bratt, Classics Department, or the Off-Campus Programs Office.

Russian Studies Program

Participants in the Russian Studies Program, administered by the Council for Christian Colleges and Universities, live and study, either in the fall or spring, in three strategic settings in Russia. After a 10-day orientation in Moscow, the program moves to Nizhni Novgorod (formerly Gorky), Russia's third largest city (12 weeks). The final 2 weeks of the semester are spent in St. Petersburg, where students live with Christian families and are involved in a service project. The academic components of the program are:

Russian Language Study
History and Sociology of Religion in Russia
Russian Peoples, Culture, and Literature
Russia in Transition
International Relations and Business

Applicants must be juniors or seniors, have a 2.75 or higher cumulative grade point average, and must receive a recommendation from the academic dean's office. For further information, contact the Off-Campus Programs Office.

S.P.E.A.K. (Marburg, Germany)

The S.P.E.A.K. program (Sprache Praktisch Erlernen und Aktiv Kommunizieren) provides intensive training in German at all levels. An assessment test on arrival determines the student's course level. Classes are held daily using a variety of methodologies and include topics in German history and culture. Activities often take students into the town of Marburg or its vicinity for practical language

experience and for cultural events such as theater performances and museum visits.

INDEPENDENT STUDIES

Other programs appropriate to one's major or minor concentration are available in many locations, domestic or abroad. The Off-Campus Programs Office has brochures and other materials available for browsing by students interested in exploring this option. Credit for these programs will be considered as transfer credit. Participants in independent study programs are not eligible for any Calvin financial aid, but retain "outside" aid and may apply for loans. Students should consult with the Off-Campus Program Director prior to beginning the application process.

Philosophy

Professors **K. Clark, L. Hardy, J. Hare, D. Hoekema, G. Mellema (chair), D. Ratzsch, S. Wykstra

Associate Professor †R. Groenhout, J. Smith

Assistant Professors D. Billings, K. Corcoran, **R. De Young, M. Rempel, C. Van Dyke

The department offers a major concentration appropriate for various careers, including professions such as higher education, law, the ministry, and government service.

PHILOSOPHY MAJOR

Philosophy 153

Philosophy 171 or 173

Philosophy 251

Philosophy 252

Philosophy 340 or 341

One 300-level historical course (Philosophy 312-340)

One 200 or 300-level systematic (Philosophy 201-211 or 365-390)

One 300-level systematic (Philosophy 365-390)

One elective

Philosophy 395

Double majors are not required to take Philosophy 395

PHILOSOPHY MINOR

Philosophy 153

Philosophy 171 or 173

Philosophy 251

Philosophy 252

Two electives

HONORS

Students wishing to graduate with honors in philosophy must complete six honors courses overall, including two philosophy honors courses with a grade of "B" or higher, at least one at the 300-level. They must achieve a minimum cumulative GPA of 3.3 and a minimum GPA in the philosophy major of 3.0, and they must successfully submit and present an Honors Paper.

COURSES

Elementary Courses

153 **Fundamental Questions in Philosophy** (3). F and S. An introduction to fundamental questions about God, the world, and human life and how we know about them. These

questions are addressed through the study of historically significant texts, primarily from the Western philosophical tradition. An emphasis is placed on philosophical reflection and discussion, constructing and evaluating arguments, reading and interpreting philosophical texts, writing clear expository prose, and engaging in faith-oriented inquiry. The course aims to help students use philosophy to respond to central issues in human life and in contemporary society. *Staff*.

171 **Introduction to Logic** (3). F and S. A course in elementary deductive and inductive logic with emphasis upon the use of logic in evaluating arguments. Suitable for first-year students, not recommended for students aiming toward graduate study of philosophy. *D. Ratzsch*.

173 **Introduction to Symbolic Logic** (3). S. A course in elementary symbolic logic, including some modal logic. This course is recommended especially for science and mathematics majors, and for those intending to study philosophy on the graduate level. Open to qualified first-year students. *S. Wykstra*.

Intermediate Systematic Courses

All intermediate courses presuppose one course in Philosophy 153.

Students may take Philosophy 201, 202, 203, 204, 205, 207, 208, or 215 for core credit in Integrative Studies if they cannot fulfill that core requirement in their programs of majors.

201 **Philosophy of Social Science** (3). * F. A study of the philosophical questions raised by methods, assumptions, and results of the human sciences, such as cultural relativism, social determinism, scientific objectivity, and religious neutrality. Attention will also be given to ethical issues encountered in the production and use of social-scientific knowledge and in the delivery of human services. Students taking this course to fulfill the integrative studies requirement of the core must have the following prerequisites in addition to Philosophy 153: Two courses in the Social Sciences. Not offered 2002-03.

202 **Law, Politics, and Legal Practice** (3). S. An investigation of such topics as the nature and types of law, sources of law, the bases of a

legal system, the nature of legal and political authority, and the status of civil and human rights. Some consideration will also be given to the complex role lawyers and judges play in our society and some of the ethical issues they may face as a result of this complexity, as well as the ways in which a Christian perspective might affect the decisions a lawyer, judge, or citizen makes about the law and legal practice. Students taking this course to fulfill the integrative studies requirement of the core must have the following prerequisites in addition to Philosophy 153: Two courses in the Social Sciences. Not offered 2002-03.

203 **Understanding Natural Science: Its Nature, Status, and Limits** (3). * S. An investigation of the nature of science (its structure, methods, and status), and its place in human life, by looking at the historical development of science, including its interactions with other human activities, especially religion. The course will encourage students to develop their own views on major issues regarding the nature of science and its appropriate relations to worldviews and faith. It will use history of science both to place these issues in context and to test rival pictures of what science is, how it works, and how it has been — and should be — related to Christian faith. Special emphasis will be given to the diverse ways these issues have been approached within the Reformed tradition. Students taking this course to fulfill the integrative studies requirement of the core must have the following prerequisites in addition to Philosophy 153: Two courses in the Natural Sciences. *D. Ratzsch*.

204 **God and Philosophy**. (3). S. A sustained philosophical reflection on the nature and existence of God, addressing such questions as the rationality of belief in God, the role of evidence in religious belief, the problem of evil, the suffering of God, the point of prayer, the use of gendered language about God, the fate of sincere believers in non-Christian religions, and the existence of hell. Students taking this course to fulfill the integrative studies requirement of the core must have the following prerequisites in addition to Philosophy 153: Two courses in Religion. *Staff*.

205 **Ethics** (3). F and S. This course reflects on the moral dimension of life as a whole, in its relation to what we believe, what we do, and what sorts of people we want to be. It

studies basic ethical questions such as the objectivity of right and wrong, what justice is, how we ought to live, why we should try to be morally good. It considers these questions both theoretically and practically (by applying them to issues in contemporary social life, such as capital punishment or abortion). It also uses both historical sources (such as Aristotle and Kant) and contemporary sources. Finally, it considers what difference Christian faith makes to the theory and the practice of morality. There may be a service-learning component in the course, depending on the instructor. Students taking this course to fulfill the integrative studies requirement of the core must have the following prerequisites in addition to Philosophy 153: Two courses in Philosophy and/or Religion. *J. Hare.*

207 Justice and the Common Good: Studies in Political Philosophy (3). * F A study of the historical sources and philosophical dimensions of the major debates in contemporary political thought, including an analysis of the basic terms of current political discourse — such as freedom, justice, rights, and equality — and an assessment of their role in the debates over such issues as racism, gender relations, multiculturalism, and religion in the public square. The course also explores traditions of Christian reflection on the purpose of the state, the limits of legislation, the nature of community, the requirements of justice, and the calling of the Christian citizen. Students taking this course to fulfill the integrative studies requirement of the core must have the following prerequisites in addition to Philosophy 153: Two courses in Social Sciences. *D. Hoekema.*

208 Philosophy of the Arts and Culture (3). * F and S. A study of the nature of the arts and their role in human cultures. The course discusses the history of philosophical reflections on these topics as well as some recent theories and debates. It aims to develop a mature understanding of issues and challenges facing participants in contemporary arts and culture. Prerequisite: Philosophy 153 (or Philosophy 151 or 152). Students taking this course to fulfill the integrative studies requirement of the core must have the following prerequisites in addition to Philosophy 153: Two courses in the Arts or two courses in Literature. *J. Smith, D. Hoekema.*

209 Philosophy of Education (3). S. A study of the nature, aims, and principles of education. Consideration is given to questions about the nature of the person, the acquisition of knowledge, the nature of truth, the nature of goodness, and their connection with curriculum, method, evaluation, and discipline in the classroom. Several Christian philosophers of education will be presented, and students will be led to articulate their own philosophy of education. *G. Mellema.*

211 Philosophy of Gender (3). * F In this course students are offered the opportunity to gain a historically-grounded philosophical understanding of the concept of gender, to understand the ways in which gender concepts are formed by, and in their turn, form contemporary cultural beliefs and practices, and to consider how these issues intersect with a Reformed understanding of human life. *C. Van Dyke.*

212 Ethical Dimensions of Health Care (3). S. A study of ethical issues that arise in the context of contemporary health care and related practices. Ethical issues such as abortion, euthanasia, informed consent, and health care allocation will be examined from a perspective afforded by current philosophical debates in ethical theory. *Staff.*

215 Business Ethics (3). F. A systematic examination of ethical concepts as they relate to business conduct, designed to be of interest to all students who are concerned about justice and fairness in the marketplace. Issues such as discrimination and affirmative action, the ethics of advertising, protection of the environment, responsibilities of employees to the firm and the firm to employees, and the rights of other stakeholder groups will be examined in the light of current debates in ethical theory. Students taking this course to fulfill the integrative studies requirement of the core must have the following prerequisites in addition to Philosophy 153: Two courses in Business/Economics. *G. Mellema.*

218 Minds, Brains, and Persons (3). S. An introduction to contemporary analytic philosophy of mind. Central issues in the philosophy of mind include such topics as the relation between mental states and the brain, the nature of consciousness, questions related to the kind of thing human persons are, in-

cluding careful consideration of contemporary defenses of dualism and problems related to personal identity. *K. Corcoran.*

225 **Chinese Thought and Culture** (4). S. A study of the relationships among Chinese philosophy, art, social life, and society, examining the expressions of Chinese thought in the writings of Confucius, Lao Tzu, Chuang Tzu, Mencius, and Mao-Tse Teng. The course also correlates Chinese thought with other aspects of Chinese culture, such as tai chi, religious practice, cuisine, calligraphy, poetry, film, painting, and family organization. *Staff.*

Intermediate Historical Courses

All intermediate courses presuppose one course in Philosophy 153.

251 **History of Western Philosophy I** (3). F and S. A survey of the major Western philosophers and philosophical movements of the ancient and medieval periods. *R. De Young, C. Van Dyke.*

252 **History of Western Philosophy II** (3). * F and S. A survey of some of the major Western philosophers and philosophical movements from the seventeenth century to the end of the nineteenth century. A continuation of Philosophy 251, which is a recommended preparation. *L. Hardy, D. Billings.*

Advanced Historical Courses

All advanced courses presuppose two or more philosophy courses, or one philosophy course plus junior or senior standing.

312 **Plato and Aristotle** (3). * F. Advanced study of Plato and Aristotle. Not offered 2002-03.

322 **St. Thomas Aquinas** (3). * F. An intensive study of selected passages from Aquinas' *Summa Theologiae* dealing with the topics of God, human knowledge, and virtue. *R. De Young.*

331 **Kant** (3). * F. A study of the *Critique of Pure Reason*. *L. Hardy.*

333 **Kierkegaard** (3). * S. A study of selected philosophical works of Kierkegaard, focusing primarily on his philosophy of religion. *M. Rempel.*

334 **Marx and Marxism** (3). * S. A critical

study of the thought of Karl Marx and his most important interpreters. Not offered 2002-03.

335 **Nineteenth Century Philosophy** (3). *. A study of some major figures in nineteenth century continental European philosophy. Not offered 2002-03.

336 **Studies in Modern Philosophy** (3). S. A study of major European thinkers of the seventeenth and eighteenth centuries. *L. Hardy.*

340 **Contemporary Continental Philosophy** (3). * S. An in-depth study of major European figures in postmodern thought such as Nietzsche, Heidegger, Foucault, Levinas, and Derrida. Prerequisite: Philosophy 252. *J. Smith.*

341 **Contemporary Anglo-American Philosophy** (3). * F. An in-depth study of some of the major figures and schools of twentieth-century Anglo-American philosophy, beginning with the birth of analytic philosophy in the works of Bertrand Russell, G.E. Moore, and Ludwig Wittgenstein. Prerequisite: Philosophy 252. *J. Hare.*

Advanced Systematic Courses

365 **Ethical Theory** (3). * S. An examination of the concepts of moral obligation and moral responsibility, with special emphasis upon the idea of creation order and divine command theory. *J. Hare.*

371 **Epistemology** (3). * F. A study of the nature, sources, types, and limits of human knowledge with special attention to the internalist/externalist debate. *S. Wykstra.*

375 **Philosophical Anthropology** (3). * S. A critical examination of major philosophical discussion of the nature of human existence, with special attention to selected topics such as gender, culture, society, mind, and body. *Staff.*

378 **Philosophy of Language and Interpretation** (3). * F. A study of the nature and sources of language, and of the most prominent theories and methods of interpretation. Special attention will be given to the basis in philosophies of language for recent controversies in linguistics and literary criticism. *J. Smith.*

381 **Advanced Logic** (4). * F. Topics include the formalization of propositional and

quantificational logic. Taught jointly with the Mathematics Department. Also listed as Mathematics 381.

383 **Metaphysics** (3). * S. A study of selected topics of metaphysics. Not offered 2002-03.

390 **Readings and Research**. F, I, and S. Prerequisite: Permission of chair. *Staff*.

395 **Philosophy Seminar** (4). * F. An advanced seminar on topics of current interest in philosophy, culminating in the preparation and presentation of a research paper. Prerequisite: Three courses in philosophy. *K. Corcoran*.

Graduate Courses

501 **The Educational Enterprise: A Philosophical Perspective** (3). S and SS. An examination of factors presently operative in the educational enterprise from the perspective of the history of Western philosophy. *G. Mellema*.

590 **Independent Study**. * F, I, and S. *Staff*.

Physical Education and Recreation

See the Department of Health, Physical Education, Recreation, Dance, and Sport for descriptions of course offerings.

Physics

*Professors S. Haan (chair), J. Jadrich, L. Molnar, **S. Steenwyk, D. Van Baak*
Associate Professors P. Harper, †M. Walkout
Assistant Professors D. Haarsma, L. Haarsma, G. Lenters

The Physics and Astronomy Department offers programs of concentration for students interested in careers or graduate studies in physics, astrophysics, or related disciplines, and for students interested in high school physics teaching. Students intending to major in physics are advised to enter college with four years of mathematics and to complete their 100- and 200-level courses in mathematics and physics during their first and second years. The Physical World core requirement may be met by Physics 110, 113, 133, 134, 212, 221, or 223. The entire science core requirement (both Physical World and Living World) may be met by the two-course sequence of Physics 133-134 or 133-235.

PHYSICS MAJOR: **at least 32 semester hours including:**

Physics 133, 134, 235, and 306 (or higher level substitutes)

Two or more advanced theory courses from Physics 335-376 (excluding 347 and 359)

Two or more upper-level laboratory courses from Physics or Astronomy 380-386 (Engineering 204 is allowed as a substitute for Physics 381)

Departmentally approved electives to bring the total to at least 32 hours

Cognates

Computer Science 153-154, 155, or 185

Mathematics 161

Mathematics 162

Mathematics 232 or 261 (Mathematics 261 is recommended)

Mathematics 231 is also recommended

All physics majors who are juniors or seniors must enroll in Physics 195 or 196 each semester and are expected to attend Physics Department seminars.

The 32-hour major is intended primarily for students seeking a flexible program, e.g., who are also majoring in another discipline or earning an engineering degree but have an active interest in physics. The major satisfies the college's concentration requirement for graduation with a B.A. degree.

Students wanting a B.S. degree must complete a total of at least 58 semester hours of science and mathematics. Persons interested in a physics-related career who want to earn a B.S. degree based upon a physics major should complete the above minimum requirements plus at least one more upper-level theory course, Physics 395, and Mathematics 231. Students planning to pursue graduate study in physics should take all the upper-level theory courses (Physics 335, 336, 345, 346, 347, 365, 375, and 376), Mathematics 333, and Physics 395-396. A summer working as a full-time research assistant is also strongly encouraged.

Students interested in a career in astronomy or astrophysics should major in Physics, minor in Astronomy, and plan their programs with D. Haarsma or L. Molnar.

PHYSICS MINOR:

At least 20 semester hours of physics, including:

- Physics 133
- Physics 134
- Physics 235
- Physics 246
- Physics 306 or the combination of Physics 196 and 335

SECONDARY EDUCATION MAJOR IN PHYSICS: 32 semester hours

At least 32 semester hours including:

Same as the standard physics major, with the following exceptions:

- Physics 384 is required as one of the upper-level experimental modules
- Physics 380 is recommended as the second module

There are additional cognates of Chemistry 103 and one of Astronomy 211, 212, or Geology 151

208 PHYSICS

SECONDARY EDUCATION PHYSICS MINOR:

The secondary education physics minor is the same as the standard physics minor.

ELEMENTARY AND SECONDARY GENERAL SCIENCE STUDIES MAJOR

The elementary and secondary group science majors require at least 36 hours of natural science courses, which are selected in consultation with a science education advisor. The major includes at least four semester hours in each of biology, chemistry, physics and earth science; a pre-approved course that discusses the relationships among science, technology, and society; and course sequence(s) in particular science areas, which are chosen in consultation with the science education advisor. Cognate courses may also be required (e.g., Mathematics 110, 143, or 161). A more detailed description of this program can be found in the *Teacher Education Program Guidebook*. Science Education Advisors: Secondary: U. Zylstra, Biology Department; Elementary: S. Haan and J. Jadrach, Physics Department.

ELEMENTARY AND SECONDARY GENERAL SCIENCE STUDIES MINOR

The elementary and secondary group science majors require at least 24 hours of natural science courses, which are selected in consultation with a science education advisor. Both elementary and secondary minors require at least four semester hours in each of biology, chemistry, physics, and earth science. The secondary minor requires a sequence of approved courses in one particular science area and a pre-approved course that discusses the relationships among science, technology, and society. Cognate courses may also be required (e.g., Mathematics 110, 143, or 161). A more detailed description of this program can be found in the *Teacher Education Program Guidebook*. Science Education Advisors: Secondary: U. Zylstra, Biology Department; Elementary: S. Haan and J. Jadrach, Physics Department.

PHYSICS/COMPUTER SCIENCE GROUP MAJOR

- Physics 133
- Physics 235

Physics 280
 Computer Science 185
 Computer Science 186
 Computer Science 280
 One from Computer Science 230, Engineering 220, or an upper division computer-science elective
 Physics or Computer Science electives (to provide a minimum of 24 semester hours in either physics or computer science)

Cognates

Mathematics 161
 Mathematics 162
 Mathematics 231 or 255
 Mathematics 261 or 232

OPTICS MINOR

At least 21 hours, including:

Physics 133
 Physics 235
 Physics 246
 Physics 345 or Engineering 302
 Physics 346
 Physics 386

Students pursuing a Physics Major and Optics Minor must follow college guidelines for overlap between a major and a minor; this is facilitated by the option in the Physics Major of substituting upper-level courses for introductory ones.

HONORS

The requirements for graduation with honors in physics are:

1. Minimum cumulative GPA of 3.3 and total of six honors courses (18 hours minimum) overall, including two honors courses outside the major;
2. At least three honors courses (of 3 or more semester hours each) in physics or astronomy; at least one of the three must be an advanced theory course from 335-379, excluding 347 and 359;
3. Cumulative GPA of at least 3.3 in physics, astronomy, and mathematics collectively;
4. Completion of an approved physics major, with at least 40 semester hours of physics or the secondary education physics major;
5. Regular participation in the departmental seminar program; and

6. Successful completion of a departmentally approved research project in physics or astronomy (typically through summer research) and Physics or Astronomy 395.

To obtain honors credit in any physics or astronomy course, a student can make a Contract with the course instructor regarding a special project. Alternatively, a student in a 100- or 200-level physics or astronomy course may earn honors in that course by concurrently taking the seminar course, Physics 195, and completing its requirements. A student must earn a grade of "B" or better in a course to receive honors designation for that course.

GROUP SCIENCE MAJOR

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 chairs of the three departments must approve each program of this type.

COURSES

Introductory Courses

110 Physical Science (4). F or S. This course focuses on scientific theories and models that provide practical understanding of everyday phenomena and modern technologies. Historical case studies, as well as hands-on laboratory activities, give insight into the methods of physical science and the process of discovery. The course also addresses the status of scientific knowledge in the context of religious belief and highlights certain ethical issues related to technological applications. It is intended primarily for non-science majors. Laboratory. Prerequisite: Mathematics 100 or high school equivalent. Not offered 2002-03.

112 Physical and Earth Science for Elementary School Teachers (4). * F and S. This course uses a hands-on approach in surveying topics in chemistry, earth science, and physics that are relevant for teaching in el-

elementary school. The course is designed to give prospective teachers background knowledge and experiences that will help them to teach inquiry-based science effectively. Topics covered include scientific models, climate and weather, convection, the particulate nature of matter, energy, electricity and magnetism, and the development of evidence in scientific investigations.

113 Scientific Analysis for Elementary School Teachers (4). F and S. This course integrates life, earth, and physical science, as well as the process of science, at a level that is appropriate for those planning to teach at the elementary level. Students gain the skills and content mastery necessary for engaging in inquiry-based science at the elementary level. Topics covered include the development of evidence in scientific investigations, the process of scientific analysis through framing, scientific questions and conducting experiments, and solving scientific problems. These scientific processes are analyzed and discussed in terms of their limits and their relevancy to a Christian perspective of the world and science. Prerequisites: Physics 112. Elementary education students pursuing a science minor or major should take Physics 212 instead of this course.

133 Introductory Physics: Mechanics and Gravity (4). F and S. An introduction to classical Newtonian mechanics applied to linear and rotational motion; a study of energy and momentum and their associated conservation laws; introductions to oscillations and to gravitation. Attention is given throughout to the assumptions and methodologies of the physical sciences. Laboratory. Prerequisite: Concurrent registration in Mathematics 162 or permission of the instructor.

134 Matter, Space, and Energy (4). S. Theories of the fundamental character of matter, interactions, and space, including historical perspectives. Observational astronomy, Greek science, and the five essences. The Copernican revolution and the Newtonian synthesis. Gravity and force at a distance. The atomic model of matter, including the states of matter. Introductory thermodynamics and the arrow of time. Blackbody radiation and energy quantization. Electromagnetic and nuclear forces. Radioactivity, nuclear processes, and the weak force. $E=mc^2$. Quarks,

gluons, and the Standard Model. Relativity and Spacetime. Modern Cosmology. Perspectives on the character of scientific inquiry, models, and humans' quest for understanding. Laboratory. Prerequisite: Mathematics 132, 161, or permission of the instructor.

195 Physics and Astronomy Student Seminar (0). F and S. A seminar course featuring student and faculty presentations on topics relating to new developments in physics, to science, technology, and society issues, and to ethical issues related to physics. Junior and senior physics majors must attend each semester; freshmen and sophomores intending to major are encouraged to attend. By meeting stated requirements in this non-credit course, students can receive an honors designation in another concurrent 100- or 200-level physics or astronomy course.

196 Physics and Astronomy Student Seminar (1). F and S. A seminar course featuring student and faculty presentations on topics relating to new developments in physics, to science, technology, and society issues, and to ethical issues related to physics. Both reading and laboratory topics are available for study and discussion. Students may not register for Physics 195 and 196 concurrently. This course may be repeated up to two times, for a total 3 semester hours credit.

212 Inquiry-Based Physics (4). * F. This course provides a hands-on study of important concepts in physics. The course is designed specifically to meet the needs of teacher-education students who wish to be elementary- or middle-school science specialists, but is open to other students who satisfy the prerequisites. Topics covered include mechanics (energy, force, friction, work, torque, momentum, and simple machines), pressure, waves, sound, light, resonance, electricity, magnetism, and radioactivity. Reflections on the nature of physical science and the physical world are included; connections to everyday experience and to technology are discussed. Prerequisite: Physics 112 or high-school physics.

221 General Physics (4). F. This course is designed for those who do not intend to do further work in physics. Topics covered in the two-semester sequence (Physics 221-222) include Newtonian mechanics, fluids, waves,

thermodynamics, electricity, magnetism, light, optics, atomic physics, and nuclear radiation. Attention is given throughout to quantitative analysis, empirical methods, experimental uncertainties, perspectives on the assumptions and methodologies of the physical sciences, and the use of physics in the life sciences. Laboratory. Prerequisites: High-school algebra and trigonometry.

222 General Physics (4). S. A continuation of Physics 221, which is a prerequisite. Laboratory.

223 Physics for the Health Sciences (4). F. An introduction to those topics in physics that are applicable to a variety of health science fields, with special emphasis on understanding various physical aspects of the human body. Topics include basic laboratory techniques and instruments for physical measurements, data analysis, basic mechanics, fluids, heat, electrical circuits, sound, optics, radioactivity and x-rays, a discussion of the nature of physical science, and a Christian approach to science. Laboratory. Prerequisites: High school geometry and algebra. Not open to those who have taken or plan to take Physics 221.

235 Introductory Physics: Electricity and Magnetism (4). F. A study of electric and magnetic forces, fields, and energy, and of the integral form of Maxwell's equations, which describe these fields; electric circuits. Laboratory. Prerequisites: Physics 133 and concurrent registration in or completion of Mathematics 261.

246 Waves, Optics, and Optical Technology (4). S. Introduction to the basic properties of waves and light, with applications to optical technology. Development of wave and particle models for light. Interactions between light and matter. Reflection, refraction, interference, and diffraction. Devices and applications, including lasers and other light sources, detectors, lenses, thin films, gratings, interferometers, polarizers, phase retarders, fiber optics, nonlinear crystals, and electro-optical technologies. Laboratory. Prerequisites: Physics 235 or Physics 222 and Mathematics 162.

Advanced Theory Courses

306 Introduction to Quantum Physics (4). S. An introduction to non-classical phenomena and their explanation in quantum me-

chanics. Wave-particle duality of matter and light; the Heisenberg uncertainty principle; Schroedinger's wave mechanics; spin; quantum mechanical treatment of atoms; introduction to statistical mechanics; the quantum mechanical description of solids; introduction to nuclear physics; and quantum computing. Prerequisites: Physics 134 or 235 and at least concurrent enrollment in Mathematics 261 or 232. Mathematics 231 is recommended.

335 Classical Mechanics (3). * F, alternate years. The motion of particles and systems in Newtonian terms, covering the assumptions, goals, and methods of Newtonian mechanics, and describing some of its notable successes. Areas of coverage include systems of particles, conservation laws, harmonic motion, central-force motion, rotational motion, and motion in non-inertial reference frames. The status of Newtonian determinism and the question of predictability are also addressed. Prerequisites: Mathematics 261 or Mathematics 232 and at least concurrent enrollment in Physics 235. Not offered 2002-03.

336 Classical Mechanics II (3). * S, alternate years. Continuation of Physics 335. Coupled oscillators, moment of inertia tensors and extended bodies in rotation. Lagrangian mechanics, the principle of least action, and the Hamiltonian formulation of mechanics. Non-linear systems and chaotic motion. Prerequisites: Physics 335 and Mathematics 231. Not offered 2002-03.

345 Electromagnetism (4). * F, even years. The basic equations of electromagnetism are developed and applied to simple charge and current distributions. Further applications are made to electromagnetic energy and electromagnetic properties of matter. Prerequisite: Physics 235.

346 Advanced Optics (3). * S, alternate years. The systematic application of Maxwell's Equations to electromagnetic radiation, including the interaction of light with matter, electromagnetic wave propagation, polarization, interference and diffraction. Includes a study of technologically significant systems such as waveguides, optical filters and fibers, laser cavities, and some electro-optical technologies. Prerequisites: Physics 246 and Physics 345 or Engineering 302.

347 Relativistic Electrodynamics (1). * S, alternate years. Special relativity is reformulated in terms of 4-vectors and this new understanding is used to explicitly articulate the relativistic nature of Maxwell's equations. An introductory understanding of special relativity is assumed. Prerequisites: Physics 134 and concurrent registration in Physics 346.

359 Seminar in Secondary Teaching of Physics (3). S. A course in perspectives on, principles of, and practices in the teaching of physics and the other natural sciences at the secondary level. Included are teaching strategies, curriculum studies, readings regarding new developments in science education, and considerations of educational uses of statistics and computers. This course should be taken concurrently with Education 346, and provides a forum for the discussion of concerns that develop during directed teaching. This course is part of the professional education program and may not be included in the major or minor in physics.

365 Thermodynamics and Statistical Mechanics (4). * S, even years. Equations of state, heat capacities, and the laws of thermodynamics. The thermodynamic potentials. Application to some simple systems and changes of phase. Kinetic theory. Statistical mechanics with emphasis on the canonical ensemble. Determination of entropy and the thermodynamic potentials with application to crystals and gases. Introduction to quantum statistical mechanics. Prerequisite: Physics 335. Not offered 2002-03.

375 Quantum Mechanics (3). * F, alternate years. 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: Physics 226.

376 Quantum Mechanics (3). * S, alternate years. A continuation of Physics 375, which is a prerequisite.

390 Independent Study in Physics. F, I, and S. Independent readings and research in physics under the supervision of a member of the departmental staff. Prerequisite: Permission of the chair.

Laboratory Courses

380 Great Experiments in Physics (2). * F, alternate years. Students recreate several historic experiments that originally led to the development or confirmation of physical theories related to quantum mechanics, nuclear physics, wave-particle duality, relativity, and gravity. Prerequisite: Physics 306. Not offered 2002-03.

381 Electronic Instrumentation (2). F, alternate years. An introduction to electronic circuits and devices and to their use in scientific measurements. Topics include a review of DC and AC circuits, introductions to diode and transistor characteristics, operational amplifiers, digital logic, and the use of specialized instruments in laboratory measurements. Prerequisite: Physics 235 or permission of the instructor.

384 Laboratory Investigations in Physics (2). * S, alternate years. A laboratory-based course in which students choose and complete investigative projects under the supervision of the instructor. The projects are relatively open-minded, with students being responsible for learning background information regarding their topics and becoming familiar with relevant equipment, then designing and conducting open-ended investigations, interpreting their results, and presenting their conclusions. Prerequisite: Concurrent registration in Physics 306. Students may concurrently enroll in Physics 395 and use Physics 384 and 395 as a single package. Not offered 2002-03.

386 Advanced Optics Laboratory (2). * S, alternate years. This course builds upon the conceptual and laboratory skills developed in Physics 246 by giving students the opportunity to investigate optical phenomena and applications using advanced instrumentation. Each student selects from a list of several multi-week projects in the fields of laser technology, spectroscopy, interferometry, electro-optical devices, non-linear optics, and quantum optics. Prerequisite: Physics 246.

395 Physics Research, Writing, and Presentation (0-3). * F, I, and S. Completion of an approved experimental or theoretical research with presentation of results. The research may be done entirely as part of this course or through another avenue (e.g., summer research with a faculty member or Physics 384).

Normally, each student is required to submit a formal, written report and to present results in a department seminar and/or poster presentation. This course may be repeated twice. Prerequisites: A faculty sponsor and approval of the department.

Graduate Courses

590 Independent Study. F, I, and S.

Political Science

Professors R. De Vries, *D. Koopman, *J. Penning, C. Smidt, W. Stevenson (chair)
Assistant Professors S. Goi, M.C. Smith, A. Patterson

The department offers a variety of courses in the areas of American politics, international relations, comparative politics, and political theory. Students majoring in political science may follow either the regular major program or a program of concentration in international relations or public administration.

POLITICAL SCIENCE MAJOR:

33 semester hours

Political Science 101
Political Science 207
Political Science 240
Political Science 251
One from Political Science 102, 275, 276, 277, 278, or 279
Eighteen additional semester hours from the department, which may include one interim course

POLITICAL SCIENCE MAJOR: INTERNATIONAL RELATIONS CONCENTRATION (33 semester hours plus twelve approved cognate hours)

Political Science 101
Political Science 207
Political Science 240
Political Science 251
Five from Political Science 102, 275, 276, 277, 278, 279, 308, or 309
Six additional semester hours from the department, which may include one interim course
Twelve approved cognate semester hours

POLITICAL SCIENCE MAJOR: PUBLIC ADMINISTRATION CONCENTRATION (33 semester hours plus four approved cognate courses)

Political Science 101

Political Science 202
Political Science 207
Political Science 209
Political Science 212
Political Science 240
Political Science 251
One from Political Science 102, 275, 276, 277, 278, or 279
One from Political Science 208, 310, 314, 317, or 318
One internship in either State/Local Government or Washington, D.C. (minimum 6 hours)
One Political Science elective (if needed to fulfill 33 hr. major requirement)
Four approved cognate courses in Business/Economics (Recommended: Business 160, 203, 204, Economics 151, 221, 222, or 339)

POLITICAL SCIENCE MINOR: 21 semester hours

One from Political Science 101, 202, 209, 212, 310, 314, 317, or 318
One from Political Science 102, 207, 275, 276, 277, 278, 279, 308, or 309
One from Political Science 110, 240, 306, or 320
Twelve additional semester hours from the department, which may include one interim course

SECONDARY EDUCATION POLITICAL SCIENCE MINOR

Political Science 101

Political Science 202

Political Science 240

One from Political Science 207, 308, or 309

One from Political Science 102, 275, 276, 277, 278 or 279

Two from Political Science 209, 212, 251, 310, 314, 317, 318, or an interim

ELEMENTARY SOCIAL STUDIES GROUP MAJOR

Students must take two specified courses from each of the following four disciplines: Economics, Geography, History, and Political Science. (Specific course choices are listed in the *Teacher Education Program Guidebook*). In addition, students must complete a sequence of courses from one of these disciplines chosen in consultation with a social studies education advisor. Advisors: D. Miller and D. Howard, History Department.

ELEMENTARY AND SECONDARY SOCIAL STUDIES GROUP MINOR

Economics 221

Economics 222

Geography 110

One course from Geography 210, 230, 310, or 320

History 151 or 152

History 229

Political Science 101

Political Science 202

INTERNSHIPS

Political Science majors are encouraged to enroll in internship programs and a variety of off-campus interims in the U.S. and abroad. The department offers an 8 semester hour credit Internship in State and Local Government, Political Science 380. Interested students should contact J. Penning. The department offers a spring semester internship and program in Washington, D.C. Interested students should contact W. Stevenson. While students may earn more than 8 semester hours of internship credits, only 8 semester hours may be applied toward the major. Additional internship credits may be taken as electives and applied toward the required total credits for graduation.

HONORS

To graduate with honors in political science, a student must attain a minimum GPA of 3.3, take at least six honors courses overall, with a minimum of four honors courses in political science, and attain a minimum GPA of 3.3 in courses within the major.

To be admitted to a major program in political science, a student must have completed Political Science 101 or 102 with a minimum grade of "C" (2.0). Canadian students should consider taking Political Science 102 and prospective Canadian elementary teachers either Political Science 101 or 102.

COURSES

101 American Politics (3). F and S. This course examines American national government and politics, focusing on 1) the constitutional formation and structures of the U.S. political system, 2) the processes by which institutions and groups formulate and implement public policy, 3) individual, group, and institutional behavior in the policy-making process, and 4) methods of evaluating the American political system in comparison with its stated goals. *Staff*.

102 Canadian Politics (3). F This course examines Canadian national government and politics, focusing on 1) the development of the Canadian state and constitution, 2) the ongoing issue of French and English Canada, 3) the processes by which institutions and groups formulate and implement public policy, 4) individual, group, and institutional behavior in the policy-making process, and 5) methods of evaluating the Canadian political system. *C. Strikwerda*.

110 Persons in Political Community (3). F and S. This course examines how different conceptions of identity relate to different understandings of political community, and therefore, to the question of who and what a citizen is. The students analyze a variety of conceptions of citizenship, drawn from a range of philosophical traditions and empirical models. They then explore how a Reformed understanding of citizenship affects the way we think of ourselves as members of different political communities. *Staff*.

202 American State and Local Politics (3). S. A study of American politics at the state and local levels. Emphasis is on state policy-making, urban politics, and metropolitics. *J. Penning.*

207 Introduction to International Relations (3). F and S. This course explores different theoretical approaches to the study of international politics. Students are introduced to a variety of explanatory frameworks for phenomena such as nationalism, neo-colonialism, war, world hunger, economic inequalities, environmental degradation, and international trade. *R. DeVries, S. Goi, A. Patterson.*

208 Urban Politics (3). This course examines urban politics in the United States, giving attention to the historical development of urban government in America, power and politics in contemporary American cities, and metropolitics and metropolitan reform. Not offered 2002-03.

209 Public Administration (3). *. An introduction to public administration, focusing on organization theory, public management, human resources administration, and budgeting. Not offered 2002-03.

212 American Public Policy (3). S. American public policy is studied, focusing on 1) the ways in which social, economic, and political institutions influence policy formation, 2) methods of evaluating public policy, and 3) the historical development and current content of American public policy in key areas such as defense, social welfare, criminal justice, and education. *J. Penning.*

240 Political Ideas in Historical Perspective (3). F and S. An introduction to the history of political thought. By examining such concepts as freedom, authority, and justice, as they are understood by representative modern and pre-modern political thinkers, the course attempts to uncover the major strands of historical development in Western political thinking. *W. Stevenson, S. Goi.*

251 Methods in Political Analysis (3). F. A study of the philosophical assumptions, theoretical issues, methodological approaches, and the analytical tools used in analyzing American, comparative, and international politics. *C. Smidt.*

271 Religion and Politics in Comparative Perspective (3). This course examines various socioreligious movements that choose to use religion as an agent of political mobilization and change across different cultural contexts. These movements are examined in terms of their historical development, their particular cultural manifestation, and their effects upon the political system in which they are found. Examples of such movements that are likely to be examined in the course are the Christian Right movement in American Politics, the Islamic fundamentalist movement in Middle Eastern politics, and the Liberation Theology movement in Latin American politics. Not offered 2002-03.

275 West European Politics (3). S. A study of the government and politics of Great Britain, France, and Germany. Attention is given to historical development, current political structures, and movements toward economic and political union. *A. Patterson.*

276 Latin American Politics (3). S. A study of modern Latin American politics with special emphasis on how different types of political regimes address the challenge of economic development. *A. Patterson.*

277 Asian Politics (3). This course is a study of the political systems and political developments in east and southeast Asia with particular emphasis on China and Japan. The course begins with China and includes a brief overview of major historical events in China with particular attention to the Maoist communist era followed by an examination of contemporary political, economic, and foreign policy issues. The course then focuses on Japan, presenting a brief historical overview followed by a study of post-World War II political and economic developments that contributed to Japan's recovery. Current economic and political problems are analyzed, as is the prospect for a greater Japanese international role. The course concludes with a study of three or four southeast Asian states such as the Philippines, Indonesia, Thailand, and Vietnam. Not offered 2002-03.

278 Russia and Central Europe (3). *. This course studies the former Soviet Union (1917-1991), the new Russia, and other states formerly part of the Soviet Union or its empire. The course begins with an overview of Rus-

sian history prior to 1917 followed by an intensive study of the Soviet communist era and the internal and external policies determined by the Soviet communist government during this Cold War era. The Gorbachev era, the collapse of the USSR, and the rise of a new Russia are then examined with a focus on the major political, economic, and social problems confronting Russia today. The course then examines in less detail selected states of the former Soviet Union now loosely aligned in the Commonwealth of Independent States (CIS), as well as central European states such as Poland, the Czech Republic, Hungary, and the former Yugoslavia. Not offered 2002-03.

279 African and Indian Politics (3). * F This course is a study of the politics and governments of the African states and India, with emphasis on typical issues and problems facing ex-colonial, developing states in the post-Cold War era. In particular, the course examines how the main goals of political and economic development - stability, democracy, growth, and equity - are interrelated and why some states, e.g., India and Mauritania, make better progress towards these goals than do others. Some of the more specific challenges and issues studied are military rule, corruption, ethnic and religious strife, poverty, population growth, environmental threats, human rights (including women's rights), and the AIDS pandemic. *A. Patterson.*

295A Political Terrorism (3). F This course will explore the subject of political terrorism, particularly as to its motivations, goals, means, effectiveness, and the responses it ought to engender. *R. De Vries.*

295B Model United Nations (1). F This course is designed to provide learning about international issues, international cooperation, and the institution of the United Nations through preparation for and participation in a national Model United Nations conference. *A. Patterson.*

306 History of Modern Political Thought (3). * S. Representative political theorists from the sixteenth through the nineteenth century. *S. Goi.*

308 Principles of American Foreign Policy (3). * 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, emerging nations, and the United Nations; and the limitations and potential of American foreign policy. *R. De Vries.*

309 International Organizations and Law (3). * F An examination of universal and regional international organizations and international law; their function and processes, their limits and possibilities, and their relationship to the international system. Special emphasis is given to the United Nations system. *R. De Vries.*

310 Constitutional Law and Judicial Process (3). * S. A comprehensive study of the role of the courts in the American political system, focusing on the Supreme Court's role in constitutional interpretation. *M.C. Smith.*

312 Men, Women, and Politics: Domestic and International Issues (3). F This course explores how ideas about men and women affect the way public policy and legislation is made. Issues concerning the differences and relationships between men and women, such as marriage and employment will be considered. An effort will be made to develop a Christian perspective on whether men and women have the same, equivalent, or radically different rights and responsibilities. The course includes case studies of recent legislation and court opinions and offers comparisons between the U.S. and other states. *S. Goi.*

314 The President and Congress (3). * An analysis of the powers and processes of these two institutions of American government and the changing relationship between them. Not offered 2002-03.

317 Parties and Elections (3). * F An analysis of the nature and importance of political parties and elections to American politics. Topics included are party development, party organization, political campaigns, electoral laws, public opinion, voting behavior, and election reforms. Attention is also given to survey research and the analysis of poll data. In election years, students enrolled in the course are encouraged to participate in the political campaign of the party or candidate of their choice. *C. Smidt.*

318 American Politics and Mass Media (3). * F A survey of the relationship between

American politics and the mass communications media. The course covers the way the federal government, through its regulations and its dissemination of information, affects the operations of the media, and how the media influence the social and political values of Americans and the functioning of the political system. Also listed as Communication Arts and Sciences 318. *G. Pauley.*

320 Twentieth Century Political Thought (3). *. A study of representative political theorists of the twentieth century, their points of emphasis, and their fundamental assumptions regarding politics and political reality. Not offered 2002-03.

341 Study in Washington, D.C. (1). F An orientation and preparation course for the semester study program in Washington, D.C. *W. Stevenson.*

380 Internship in State and Local Government (8). S. A field experience involving working for a government agency, an elected government official, or a private interest group in state or local government. Interns work sixteen hours per week under the direction of an agency instructor and attend a weekly seminar conducted by the college instructor.

Prerequisites: A minimum grade point average of 2.5 and completion of Political Science 202 or permission of college instructor. Application for internships is made in September of each year. *J. Penning.*

390 Independent Study. F, I, and S. Reading or directed projects for majors. Open with the permission of the chair and the instructor under whom the work will be done. *Staff.*

399 The Christian Faith and Public Life (3). S. This capstone course examines the relationship between the Christian faith and public life. The first half of the course reviews and addresses what our public responsibilities are as Christians generally, and Reformed Christians more specifically, and how such responsibilities may relate to life in our contemporary pluralistic, democratic context, and to the state within the context of the broader international order. The second half of the course permits students to engage in a major research project of their choosing that focuses on the relationship between their Christian faith and some particular aspect of public life. Prerequisites: Junior or senior standing; Biblical Foundations I or Theological Foundations I, *Developing a Christian Mind*, and *Philosophical Foundations*. Not offered 2002-03.

Psychology

Professors C. Beversluis, M. Bolt, J. Brink (chair), W. Joosse, P. Moes, A. Shoemaker, S. Stehouwer, R. Terborg, G. Weaver

Associate Professors L. De Haan, M. Gunnoe, D. Tellinghuisen

Adjunct Assistant Professors C. Kok, L. Zwart

Adjunct Associate Professors J. DeBoe, P. Hamberg

The department offers a varied set of courses dealing with important facets of individual human functioning. The major and minor programs in psychology are designed to allow students flexibility to select courses, which fit their present interests as well as their future expectations. Students majoring in psychology often enter “people-related” jobs in business, education, and the social services, or they pursue graduate study in psychology and related fields. A student handbook for majors can be obtained from the department office.

The core requirement in psychology is met by Psychology 151. Education 301 satisfies the core requirement only for students in teacher education programs.

PSYCHOLOGY MAJOR

Psychology 151

Psychology 255

Psychology 256

Psychology 399

One 330-level Psychology course

Two 300-level Psychology courses

Three Psychology electives (may include one interim)

Students who entered Calvin prior to the Fall of 2002 may take Psychology 306 instead of Psychology 256 in order to complete the major.

Students must complete a minimum of 10 psychology courses and a minimum of 32 semester hours of psychology course credit.

Students must have a minimum grade point average of 2.00 in psychology courses to declare a psychology major.

Not more than one interim may be included in the ten-course major nor may Psychology 390 or any interim be counted as a 300-level elective.

Students may include either Psychology 201 or 204, but not both, as part of their major.

Students should ordinarily take Psychology 255 during their sophomore year and Psychology 256 in the semester following completion of Psychology 255.

Students intending to do doctoral work in psychology should include Psychology 395 or 356 in their program of concentration and should plan their program with a departmental advisor. These courses are less important for masters and/or counseling programs.

All majors must complete the Psychology Department Senior Assessment in the spring of the year they intend to graduate.

PSYCHOLOGY MINOR

Psychology 151

At least one from Psychology 255, 256, 306, 308, 330, 331, 332, 333, 334, and 356

Four Psychology electives (may include one interim)

Students must complete a minimum of 6 psychology courses and a minimum of 18 semester hours of psychology course credit

Students may include either Psychology 201 or 204, but not both, as part of their minor.

SECONDARY EDUCATION PSYCHOLOGY MINOR

Psychology 151

Psychology 201

Psychology 212

Psychology 310

At least one from Psychology 256, 308, 330, 331, 332, 333, or 334

Psychology 399

One psychology elective (may be an interim)

Students must complete a minimum of 7 psychology courses and a minimum of 20 semester hours of psychology course credit.

HONORS

Students wishing to graduate with honors in psychology must complete at least six honors courses of which at least three must be in psychology. One of the three psychology honors courses must involve an honors research paper in Psychology 395, or Psychology 356, or a comparable honors project in Psychology 390. Students must also achieve a minimum cumulative GPA of 3.3 in their psychology courses.

INTERNSHIPS

Psychology majors, who have demonstrated ability in their psychology courses, are encouraged to apply for an internship placement during their junior or senior year. Psychology 380 provides a four-semester hour credit internship experience in one of a variety of areas of professional psychological practice and/or research (see course description). These experiences can provide important background for bachelor's degree level employment or graduate education in psychology. Students may also apply for an eight-week summer internship experience in neuropsychology at Rush Presbyterian St. Luke's Medical Center in Chicago. Although students may earn more than 4 semester hours of internship credits, only 4 semester hours can be applied toward the major. Interested students should contact G. Weaver.

COURSES

151 Introductory Psychology: Perspectives on the Self (3). F and S. This course provides an introduction to psychology's study of the biological, affective, cognitive, and social dimensions of human identity and behavior. It includes the consideration of such issues as perception and consciousness, learning and memory, motivation and emotion, personality development and social interaction, stress and adjustment. Students are introduced to the methods of psychological research and to the role of psychology in scientific endeavor and human application. Through assigned reading and writing as well as classroom discussion, students learn to critically weigh alternative claims regarding human behavior and to appreciate a holistic approach to the study of persons. *Staff.*

201 Developmental Psychology: Lifespan (3). * F and 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 factors which influence that behavior. Not open to students who have taken or plan to take Psychology 204. Prerequisite: Psychology 151, Education 301, or permission of the instructor. *W. Joosse, L. DeHaan.*

204 Developmental Psychology: Child (3). * F and S. A basic overview of normal development from conception through adolescence. Organization is chronological (infant, toddler, etc.) and conceptual (cognitive development, social-personality development, etc.). Not open to students who have taken or plan to take Psychology 201. Prerequisite: Psychology 151, Education 301, or permission of the instructor. *M. Gunnoe.*

207 Developmental Psychology: Adolescent (3). * S. A study of human development in the second decade of life. Topics include the types of transitions experienced (social, cognitive, and physical); the contexts of adolescence (family, peer-group, school, and work); and adaptive vs. maladaptive attempts to establish identity and intimacy. Prerequisite: Psychology 151, Education 301, or permission of the instructor. *M. Gunnoe.*

211 Personality and Adjustment (3). *. A study of theory and research pertinent to personality dynamics and adjustment. Coverage

typically includes concepts of mental health, the nature of stress, the self concept, and principles of emotional and interpersonal competence. Special emphasis is given to influential world views, Christian assessments, and personal applications. Prerequisite: Psychology 151 or permission of the instructor. Not offered 2002-03.

212 Psychopathology (3). * F and S. A study of the wide range of abnormal behaviors. Emphasis is on causes, dynamics, and classification, with some attention to treatment approaches. Prerequisite: Psychology 151 or permission of the instructor. *C. Kok, S. Stehouwer, G. Weaver.*

213 Mental Health and the Classroom (3). * 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. Prerequisite: Psychology 151, Education 301, or permission of the instructor. *P. Hamberg.*

216 Psychology of the Exceptional Child (3). *. A basic overview of children who differ physically, mentally, or behaviorally from "normal" children. Emphasis on causal factors, characteristics, and diagnosis. Not open to students who have taken or plan to take Special education 216. Prerequisite: Psychology 151, Education 301, or permission of the instructor. Not offered 2002-03.

220 Psychological Perspectives on Marriage and the Family (3). * F. This course focuses on psychological theory, research, and perspectives on issues in family life. The course examines historical and current conceptualizations of the family as well as cross-cultural and sub-cultural conceptualizations of the family. Psychological perspectives on marriage preparation, marriage, divorce, infertility, child rearing, and single parenthood as well as developmental changes in the family are addressed. The course focuses as well on marital and family dysfunction, treatment, and health. Prerequisite: Psychology 151 or permission of the instructor. *L. DeHaan, S. Stehouwer.*

222 Human Sexuality and Gender (3). *. This course explores the ways that sexuality and gender have been studied as variables in psy-

chological research and theory. Special attention will be given to recent theories of physiological and cultural influences on men's and women's development. Biblical and popular perspectives on sexuality and gender issues will be examined, and promises and problems in gender relations will also be studied. Prerequisite: Psychology 151 or permission of the instructor. Not offered 2002-03.

255 Statistics and Research Design. * F and S. This course is an introduction to statistics and computer application in psychology. Concepts and procedures taught include levels of measurement, measures of central tendency, correlation techniques, probability theory, and hypothesis tests. This course is intended to meet the core Mathematics requirement for Psychology majors and minors. Psychology students typically take this course in their sophomore year. Prerequisites: An introductory course in one of the social sciences (e.g., Psychology 151) and meeting the Calvin admission requirement in Mathematics. *A. Shoemaker.*

256 Fundamentals of Research and Practice (3). * S. This course will provide hands-on, participatory research activities that build on the basic theories and applications of Psychology 255. Students will be conducting projects that allow the learning of fundamental practice skills in community or social science research, but also provide additional practice and theory building in statistics and basic research methods. Specific concepts will include basic perspectives in social science research, the fundamentals of measurement in social sciences, sampling techniques, survey design, application of statistical methods to real world situations, use of SPSS, ethical issues in research, and the critical evaluation of research methods and results. Prerequisites: An introductory course in one of the social sciences (e.g., Psychology 151) and Psychology 255. *D. Tellinghuisen.*

280 The Interview: Theory and Practice in Clinical and Organizational Settings (2). * S. This course focuses on psychological theory, research, and practice in regard to the interview. Emphasis is on historical and current conceptualizations of interviewing techniques and processes. Theory, issues, and techniques regarding the interview are applied to both clinical uses and organizational settings. Pre-

requisite: Psychology 212 or permission of the instructor. *S. Stehouwer.*

301 Organizational Psychology (3). * S. A consideration of psychological concepts and research related to human action in work situations, particularly in organizations. The course includes discussions of the psychological processes of individuals involved in work and management (e.g., perceptual discrimination in varying tasks, strategies in problem solving, motivation for power and achievement, and effects of compensation on learning), and the social psychology of the work organization (communication patterns, decision-making processes, performance evaluation, conflict, and stress). The relationship of psychological theory and practice are analyzed through case studies of organizational experiences. Also listed as Business 351. Prerequisite: Psychology 151 or permission of the instructor. *C. Moody.*

308 Advanced Research Methods (4). * F A continuation of Psychology 255 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 majors and others interested in the social behavioral and health sciences. Students who have taken a course in statistics but are not familiar with SPSS must consult the instructor before registering for this course. Prerequisites: Psychology 151 and 255 or permission of the instructor. *D. Tellinghuisen.*

310 Social Psychology (3). * F and S. A study of how people think about, influence, and relate to one another. Attention is given to such topics as persuasion and attitude change, conformity and obedience, group conflict and decision-making, stereotypes and illusions of social thought, attraction and prejudice, and altruism and aggression. Students may not receive credit for this course and Sociology 310. Prerequisite: Psychology 151 or permission of the instructor. *M. Bolt.*

311 Theories of Personality (3). * F and S. A study of the enduring human personality characteristics that often distinguish one person from another. Extensive consideration is given

to biological, psycho-dynamic, social, cognitive, and trait-descriptive theories of personality structure and functioning. The course also introduces students to a variety of personality scales and inventories designed to identify important individual differences in personality. Prerequisites: Psychology 151 and 212 or permission of the instructor. *J. Brink*.

312 Principles of Psychological Measurement (3). * F An introduction to the theoretical and practical issues of psychological testing. Topics include: Reliability and validity of tests, construction of psychological and educational measures, the use and misuse of standardized tests, strengths and weaknesses of commonly used tests, and the social, educational, and legal issues involved in testing and measurement. Prerequisite: Psychology 255 or permission of the instructor. Not offered 2002-03.

314 Theories of Counseling and Psychotherapy (3). * F An introduction to counseling and psychotherapeutic methods for dealing with emotional disorders. The course includes an overview of major approaches to counseling and psychotherapy with an analysis of the theoretical aspects and techniques employed. An attempt is also made to integrate these various approaches and to view them from a Christian perspective. Prerequisites: Psychology 212 and 311 or permission of the instructor. *S. Stehouwer*.

322 Perspectives of Psychology (2-4). * This course explores the relationships of psychology to, or its involvement in, such areas as religion, literature, art, family, and culture. When offered, the particular topic area will be announced in the class schedule. Prerequisite: Psychology 151 or permission of the instructor. *Staff*.

330 Psychology of Motivation (4). * S. An investigation of physiological, learning theory, and social-cognitive explanations of motivation. Topics include: Brain mechanisms influencing hunger, sexual desire, attention, punishment and reward, drug effects on personality, emotional processes in addiction, drive and incentive effects in clinical disorders and work activity, gender and culture differences in achievement and power motives, decisional processes in learned optimism, and applications of theory to learning

in inner city classrooms and to industrial productivity. The study of motivation is presented as a model for understanding inter-relationships among different approaches to psychological theory and research. Two-hour laboratory each week. Prerequisite: Psychology 151 or permission of the instructor. *G. Weaver*.

331 Psychology of Sensation and Perception (4). *. 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: Psychology 151 or permission of the instructor. Not offered 2002-03.

332 Psychology of Learning Processes (4). * F A consideration of how research findings and theory relate to learning processes. Included are such issues as the role of reinforcement and punishment, methods of enhancing or suppressing performance, biological limits on learning, stimulus generalization, and discrimination learning. The importance of learning theory for psychology in general is stressed. Two-hour laboratory each week. Prerequisite: Psychology 151 or permission of the instructor. *R. Terborg*.

333 Brain and Behavior (4). * F This course explores the rapidly expanding knowledge of brain function that is having a major impact on the way we understand everyday behavior, personality, and human nature. Specific topics include the relationship of brain function to vision, sleep, sexuality, memory, language, emotions, anxiety, depression, schizophrenia, and homosexuality. The course includes an introduction to the work of clinical neuropsychologists and cognitive neuroscientists by way of clinical case studies. Class discussions and readings also focus on our understanding of persons in light of this research. Laboratory and off-campus experiences introduce basic anatomy and physiology of the brain, electrophysiological measures (EEG), behavioral measures of brain function, and neuropsychological testing. Prerequisites: Psychology 151 and Biology core or permission of the instructor. *P. Moes*.

334 Cognitive Psychology (4). * S. A survey of research and theory in the study of human cognition. The course covers the acquisition,

representation, and use of knowledge with emphasis on the processes of memory, language, and decision-making. Two-hour laboratory each week. Prerequisite: Psychology 151 or permission of the instructor. *D. Tellinghuisen.*

356 Experimental Psychology (4). *. This course explores experimental designs and the statistical techniques related to them. Students will have hands-on experience with experimental control techniques, factorial designs and interaction effects, and the use of the analysis of variance. In addition, students will design their own experimental research, implement their studies and analyze the resulting data. This course is a preparation for graduate-level research. Prerequisites: Psychology 255 and 256. Not offered 2002-03.

380 Internship in Psychology (4). * F and S. Students are placed in a field experience related to a specialized area of psychological practice or research (e.g., school psychology, industrial-organizational psychology, or counseling-rehabilitation psychology). Students work eight hours per week under the direction of an on-site supervisor and participate in regular seminar meetings conducted by the college instructor. These experiences will introduce students to service in professional psychology, as it is related to issues of psychological theory, research, client characteristics and needs, professional standards, and Christian discipleship. Each student will author a project that communicates learning throughout the internship. Prerequisites: Junior or senior psychology major, completion of course sequences related to the internship specialization (information available from the Psychology Department), and departmental approval of student application. *L. De Haan, G. Weaver.*

390 Independent Study. F, I, and S. Prerequisite: Permission of the department chair. *Staff.*

395 Research Seminar (4). * S. The preparation, presentation, and discussion of papers based on current psychological literature and upon individual empirical research on selected topics. Prerequisites: Psychology 255 and 308. Enrollment is limited and departmental approval is required prior to registration. *P. Moes.*

399 Psychology and Religion (3). * F and S. This capstone course examines relationships between psychology and religion. It includes

discussions of how several major psychologists have attempted to explain religious faith and practice. The course examines frameworks that have been proposed for relating Christian beliefs about persons and psychological explanations. Consideration is given to how these frameworks have influenced recent investigations of areas related to our experiences of Christian faith (e.g., perception, moral development, and emotion). Prerequisites: Psychology 151 and three additional psychology courses or permission of the instructor. (See description of Templeton Award linked to the course under "Financial Information, Other Student Awards" heading of the catalog.) *G. Weaver.*

Graduate Courses

510 Educational Measurement (3). This course provides a theoretical and practical background, which will enable classroom teachers to construct or select tests for specific purposes. It is designed to enable teachers to use test scores wisely and effectively in the learning process. A major paper requires knowledge and application of the concepts of reliability and validity, as well as practical considerations in the evaluation of a standardized test of the student's choice. *Staff.*

511 Introduction to Guidance and Counseling (3). This course provides a survey of principles, major theories, and resources that shape guidance and counseling efforts in the schools and other settings. The course provides an introduction to the field for those wishing to become more knowledgeable and for those teachers wishing to contribute to and benefit from guidance and counseling efforts. As such, this course provides a focus on emotional disturbance (behavior disorders) and learning disabilities among school-aged children and adolescents, including specific examination of psychodynamic, biophysical, systemic, cognitive, and behavioral models of etiology and treatment. Particular emphasis will be given to identifying methods of treatment in elementary and secondary schools and the community. These methods will be further examined as cooperating with and complementing the efforts of teachers, parents, and other community professionals. *Staff.*

590 Independent Study. F, I, and S. *Staff.*

Religion

Acting Chair J. Vanden Bosch

Professors C. de Groot, A. Griffioen, R. Plantinga, K. Pomykala, J. Schneider, T. Thompson

Associate Professors D. Crump, B. Cushman, R. Whitekettle

Assistant Professors C. Farhadian, K. Hotz, **W. Lee, D. Harlow, M. Mathews, L. Smit

Adjunct Assistant Professor J. Witvliet

The department offers a general major in religion and a teaching major for students in secondary education. In addition, students are encouraged to design group majors, such as Religion and Philosophy, Religion and History, or Religion and Sociology. Two minor concentrations are offered: A group minor in missions and a general minor. These programs are described below and will be worked out with a departmental advisor who will help design the program according to the student's specific needs and interests.

GENERAL MAJOR

One course in Old Testament (Religion 211-214)

One course in New Testament (Religion 221-224)

One course in Historical Theology (Religion 241-244)

One course in Systematic Theology (Religion 230-237, 251)

One course in Religious Studies (Religion 250, 351, 352)

Religion Seminar (Religion 396)

Four elective courses in Religion (excluding Religion 121 and 131)

The general major in religion is designed for students seeking a strong background in biblical and theological studies as preparation for various professions, for graduate education, or for Christian service generally. It is not limited to students preparing for the ordained ministry. The general major consists of ten courses (30 semester hours), including two 300 level courses (excluding Religion 301 and 396). A departmental interim course may be included as an elective course. As part of the departmental writing program, majors must designate one departmental course (excluding Religion 121, 131, 359, 396) prior to their senior year as writing enriched. This course will include additional writing, a revision component, intensive evaluation, and will prepare the student for Religion 396. Students considering seminary or graduate school should consult their advisor about a recommended language cognate. Admittance to the major program re-

quires completion of a core course with a minimum grade of "C" (2.0).

SECONDARY EDUCATION MAJOR

Biblical Foundations Core

Theological Foundations Core

Religion 250

Religion 351

Interdisciplinary 234

One elective from biblical studies

One elective from theological studies

Two courses from Art 232, 233, Classics 231, History 231-233, Philosophy 204, 205, Psychology 399, Sociology 153, religion courses in biblical studies and theological studies, or an approved interim.

Religion 359

The teaching major is for education students who plan to teach religion in secondary schools and consists of ten courses (30 semester hours), listed above. During student teaching for this program, which is offered in the spring semester, students should enroll in Education 346 and Religion 359. The teaching major in religion fulfills the requirements for the state-certified Academic Study of Religions minor. (It cannot count as a state-certified major in a secondary education program). Graduates of the teaching major in religion will receive a special certificate from Calvin College as a credential of qualification for secondary religion teaching. Teaching majors must fulfill the departmental writing program requirements as stated above under the general major. T. Thompson is the advisor for the teaching major.

INTERDISCIPLINARY MAJORS

Interdisciplinary majors in religion and other fields may be designed according to the guidelines for group majors (see page 35). For example, a student wishing to present an interdisciplinary major in Religion and Philosophy could take 4–6 courses (12–18 semester hours) in religion and 4–6 courses (12–18 semester hours) in philosophy, and 2 courses (6 semester hours) from a third discipline. Interdisciplinary majors must be carefully planned and must be approved by both major department chairs and the registrar.

GENERAL MINOR

One core course in religion
Five other courses from any area of religion

The general minor in religion is for students who seek to develop a biblical and theological perspective for work in other disciplines and for Christian service generally. This minor consists of six courses (18 semester hours), one core course and five others, one of which must be from the 300-level (excluding Religion 301). An appropriate interim course may be included with the approval of the advisor.

GROUP MINOR IN MISSIONS

Religion 251
Religion 252
Sociology 253

Three courses chosen (in consultation with an advisor) from the following: Religion 351, Geography 320, 240, Sociology 153, Economics 337, TWDS 201, area study courses (History 238, 241, 242, 245, 246, 331, 338, 371, 233–236, 355, and Spanish 310), an appropriate interim course, and other courses approved by the advisor as part of an introduction to holistic missions

The group minor in missions is for students interested in missions and other cross-cultural ministries and consists of 6 courses (18 semester hours). W. Lee is the advisor for the group minor in missions.

COURSES**Basic Courses**

121 Biblical Literature and Theology (3). F and S. This course is a study of the Bible within

its literary, historical, cultural, and canonical context in order to understand its central theological teachings. *Staff.*

131 Christian Theology (3). F and S. A study of Christian theology in light of its historical development and ongoing significance, this course surveys the central teachings of the Christian Church as rooted in the Bible, formulated by key theologians, and summarized in the ecumenical creeds and Reformed confessions. *Staff.*

Intermediate Biblical Studies Courses

Prerequisite: Religion 121 or 131 (or old core equivalents) and sophomore or higher status, or permission of the instructor.

211 Pentateuch (3). F and S. A study of the first five books of the Bible. This course examines the accounts of creation, the fall, Israel's ancestors, the exodus, and the giving of the Law. Theological issues explored include the nature of God, human beings, and the world, our covenantal relationship with God, and the presence of God in historical events. *W. Lee.*

212 Old Testament Historical Books (3). F and S. This course explores the Old Testament books of Joshua through 2 Kings, 1 and 2 Chronicles, Ezra, and Nehemiah in terms of their literary features, historical settings, and theological themes. Particular attention is devoted to the prophetic character of these works, which provide a theological interpretation of Israel's history. *B. Cushman.*

213 Psalms and Wisdom Literature (3). F and S. Students examine the books of Psalms, Proverbs, Job, and Ecclesiastes. The three focuses of the course are how to read poetry, the different categories of the Psalms and their interpretation, and the role of wisdom books in the Bible. *R. Whitekettle.*

214 Prophets (3). S. The books of Old Testament prophetic literature are studied, including Isaiah, Jeremiah, Ezekiel, and selected minor prophets. Each book is considered in light of its literary characteristics and sociohistorical context with a view to explicating the text's theological message and its contemporary relevance. *R. Whitekettle.*

221 **Synoptic Gospels and Acts** (3). F and S. This is a study of Matthew, Mark, and Luke-Acts. After a summary of introductory issues, this course examines the text and context of each book to discern its major themes. The relationship between the Synoptic Gospels and the historical Jesus is also considered. *D. Crump, D. Harlow.*

222 **Johannine Literature** (3). F and S. This course studies the Fourth Gospel and 1-3 John. Students consider matters of introduction, historical context, interpretation of major themes and distinctive theological contributions. *D. Harlow.*

223 **Paul's Letters** (3). F and S. Paul's letters are studied, focusing on the theological and ethical themes with an emphasis on how these themes are expressed in the diverse contexts of early Christian communities. *K. Pomykala.*

224 **Revelation and General Letters** (3). F. This course studies Revelation and the general letters, including Hebrews, James, 1 and 2 Peter, and Jude, in terms of their literary features, historical setting, theological emphasis, and present relevance. *D. Harlow.*

Advanced Biblical Studies Courses

Prerequisite: Religion 121 or an intermediate biblical studies course.

307 **Interpreting the Bible** (3). * F A study of the methods and principles of biblical interpretation. Various exegetical and hermeneutical approaches will be examined and evaluated in terms of their usefulness for understanding the meaning and message of the scriptures. *W. Lee.*

309 **Biblical Theology** (3). * S. A course in constructive biblical theology, focusing on central themes, the problem of the unity and diversity of scripture, the "center" of biblical revelation, and proper methodology. Issues are considered in the context of historic and recent attempts to construct a biblical theology. Not offered 2002-03.

311 **History and Archaeology of Ancient Israel** (3). * F A study of the history of ancient Israel from the patriarchs through Ezra in the context of recent research on this topic. This course will consider the sources for reconstructing the history of Israel, including the

Old Testament, Ancient Near Eastern literary remains, and archaeological evidence, as well as appropriate methods for interpreting these sources. *R. Whitekettle.*

313 **When Women Read the Old Testament** (3). *. This course is the special topic for the Current Issues in Old Testament Studies course. In the last two decades, biblical interpretation by women and about women has blossomed and made significant contributions to the field of biblical studies. This course will study feminist approaches to the Old Testament and examine key passages relating to gender issues. Not offered 2002-03.

321 **Intertestamental Judaism** (3). *. A study of Jewish history, literature, and thought from 400 B.C. to A.D. 100, as a background for understanding the New Testament. Literature studied includes the Apocrypha and Dead Sea Scrolls. Not offered 2002-03.

323 **The Dead Sea Scrolls** (3). S. This is the special topic for the course Current Issues in New Testament Studies. It will provide a survey of the Dead Sea Scrolls. Topics to be covered include the discovery, acquisition, and publication of the Scrolls; the identification of the Jewish group that copied and composed them; the archaeology of the Qumran site; the history, beliefs, and practices of the Qumran community; and the impact of the Scrolls on study of the textual and canonical formation of the Hebrew Bible, of early Judaism and Christianity, and of the New Testament. *D. Harlow.*

Intermediate Theological Studies Courses

Prerequisite: Religion 121 or 131 (or old core equivalents) and sophomore or higher status, or permission of the instructor.

230 **The Doctrine of Revelation** (3). This course is designed to help students explore Reformed concepts of revelation in contemporary cultural context. Traditional models of general and special revelation, and models of biblical inspiration and authority are explored and developed in the context of modern and post-modern concerns in philosophy, science, and non-Christian religions. Not offered 2002-03.

231 The Doctrine of God (3). S. This course is designed to examine Christian concepts of God in considerable depth within the context of historic debates and modern discussions. Issues considered include the possibility and extent of human knowledge of God, evidence for God's existence, the attributes of God, and the nature of the Trinity. *L. Smit.*

232 The Doctrine of Creation (3). F. This course investigates Christian teaching about the creation of the world. Topics considered include the interpretation of Genesis 1 and 2, creation out of nothing, creation and evolution, the goodness of creation and the problem of evil, the image of God, the cultural mandate and the idea of stewardship, and the eclipse of creation in modern thought. *T. Thompson.*

233 The Doctrine of Christ and Reconciliation (3). S. The main goal of this course is to provide students with an opportunity to examine and reflect upon historic and Reformed doctrines of the person and works of Christ in the context of contemporary analytic thought and current biblical theology. Topics include Christ as God and man in current discussion, New Testament Christology and the current debates, and Reformed Christology in the making. *J. Schneider.*

234 The Doctrine of the Holy Spirit and Church (3). F and S. This course is a study of the biblical teachings, confessional formulations, theological reflections, and experiential impact of the universal and local church as the creation and manifestation of the Holy Spirit, as well as the attributes and ministries of the Church universal. *A. Griffioen.*

235 Eschatology (3). F. Christian teachings concerning the end times and last things are studied in this course, including their biblical basis, historical formulations, and contemporary relevance. Topics covered include the return of Christ, the final judgment, the resurrection of the body, and eternal life. Millennialist and dispensationalist issues are also critically analyzed both historically and theologically. *T. Thompson.*

237 Christian Worship (3). F. A study of the history, theology, and practice of Christian worship. This course examines the relationship between theology and worship by considering the biblical basis for worship, the

history of Christian liturgy, and contemporary worship. Examples of sermons, baptismal, and Lord's Supper practices, hymnody, prayers, dance, art, and architecture from both traditional and contemporary worship are studied. *J. Witvliet.*

241 General Church History (3). 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 to be taken if students have taken or plan to take Religion 243 or 244. Not offered 2002-03.

242 American Religious History (3). A consideration of the theology and religious history of America from the immigration period to the present. Attention is paid to the European background, early establishment of Christianity in America, the colonial era, revivalism and confessionalism, emergence of evangelicalism, fundamentalism and liberalism, and various 20th century movements, including current ecumenism. Major social and political developments and their influence upon the American religious scene will be considered throughout. Not offered 2002-03.

243 History of Christian Theology I (3). F and S. This is a historically oriented study of Christian theology in the Patristic and Medieval periods (100-1500). Particular attention is paid to the development of key Christian doctrines such as the Trinity and the Incarnation and to questions such as the relationship between faith and reason. *K. Hotz.*

244 History of Christian Theology II (3). F and S. This is a historically oriented study of Christian theology in the Reformation and Modern periods (1500 to the present). Particular attention is paid to the development of key Christian doctrines such as justification, sanctification, and the church and to questions such as the relationship between faith and reason. *M. Mathews.*

251 Christianity and the World's Religions (3). F. This course examines the relationship of Christianity to the religions of the world. An attempt is made to understand the phe-

nomenon of religion from a theological perspective by investigating how various biblical and Christian writers have viewed Christianity's place in the religious history of the world. Special emphasis is placed on twentieth-century attempts to confront the reality of religious pluralism. *R. Plantinga*.

Advanced Theological Studies

Prerequisite: Religion 131 or an intermediate theological studies course.

301 **Christianity and Culture** (3). S. This course is a critical survey of models by which God's people have defined their relationship to the world, from Biblical times to the present, with a particular emphasis on the Reformed tradition. Special attention is given to the contemporary relevance of this discussion, both in terms of ways in which different models are visible in today's world and in terms of ways that the Reformed model can be applied to present concerns. *L. Smit*.

332 **Theological Ethics** (3). * S. A study of Christian moral theory and its application to selected cases. This course examines how diverse understandings of God's relationship to the creation inform how Christians think about the moral life. Ethical issues such as war, human sexuality and reproduction, death and dying, and the environment are analyzed in light of theological commitments. *K. Hotz*.

333 **Studies in Roman Catholic Theology: Contemporary Catholic Theology** (3). A sympathetic study of Roman Catholic theology, with particular attention to developments since the Second Vatican Council (1962-1965). Topics include scripture and tradition; grace and justification; church, liturgy, and sacraments; ethics and the church in the modern world; death and the afterlife; Marian devotion; ecumenism; ecclesiastical authority and papal infallibility; and the pontificate of John Paul II. Not offered 2002-03.

341 **Studies in Early and Medieval Theology: Augustine and the Augustinian Tradition** (3). * F. Augustine is one of the greatest figures in the history of Christian theology. This course studies several of his major works and the consensus which developed around his thought throughout the middle ages. The class begins with an in depth look at Augustine, then surveys key Augustinians through-

out the middle ages, culminating with a deeper look at two of the great 13th century theologians, Bonaventure and Aquinas, each of whom appropriates Augustine in a distinctive way. *L. Smit*.

343 **Studies in Reformation Theology** (3). * F. A study of selected doctrinal topics and central figures of the sixteenth century Protestant Reformation. *J. Schneider*.

345 **Studies in Contemporary Theology** (3). * A study of selected figures, movements, and doctrinal topics in twentieth century theology. Not offered 2002-03.

Religious Studies

250 **Introduction to the Study of Religion** (3). F. A thematic introduction to the phenomenon of religion in comparative perspective. Issues examined include the dichotomy between the sacred and the profane, the nature of religious experience and its various expressions in life, the significance of myth and ritual, and differing analyses of human existence. Attention is also given to questions about the origin, nature, and function of religion in human life and society, and to issues pertaining to the study of religion in the humanities and social sciences. *R. Plantinga*.

252 **Introduction to Missions** (3). S. A general introduction to Christian missions in biblical and historical perspective. This course surveys the biblical and theological foundations for missions, and the church's interpretation and implementation of the task of spreading the gospel. The methods, challenges, successes, and failures of Christian missionary activity will be considered. Students will be involved in a local mission organization and use this practical experience as an additional basis for reflection. *C. Farhadian*.

351 **World Religions** (3). * F. A historical investigation of the nature of religion by examining the chief theories and practices of some of the world's major, non-Christian religions, including Hinduism, Buddhism, Confucianism, Taoism, and Islam. Emphasis is placed on each tradition's analysis of the basic human problem and the solution that it offers to the problem. Some attention is also paid to new, emergent religious movements and their relationship to older established traditions.

Prerequisite: One religion department course. *C. Farhadian.*

352 Judaism (3). * F A study of the major developments in Jewish history, thought, and practice beginning with the second temple era and extending to the contemporary period. Subjects studied will include rabbinic Judaism and its literature — the Mishnah and the Talmuds, medieval Jewish philosophy and mysticism, emancipation, Zionism, the Holocaust, and North American Judaism. The question of Jewish-Christian dialogue will also be considered. Prerequisite: One religion department course. *K. Pomykala.*

Seminars

359 Seminar in Principles of and Practices in Secondary Religion Teaching (3). S. A course in perspectives on and practices in the teaching of religion and theology on the secondary level. This course should be taken concurrently with Education 346. Before taking Religion 359, students must complete Education 301/303 and 307. *T. Thompson.*

379 Research Topics in Christian Worship (3). Participation in collaborative research on the theology, history, and practice of Christian worship. Topics are chosen in conjunction with the scholarly initiatives of the Calvin Institute of Christian Worship. Enrollment open to qualified juniors and seniors. Prerequisites: Biblical and Theological Foundations and permission of the instructor. *J. Witvliet.*

396 Religion Seminar (3). S. An advanced seminar for senior majors in religion and other qualified students. This course considers significant issues in biblical, theological, and religious studies and requires a major research paper. Prerequisites: Three electives in religion and for non-majors, permission of the instructor. *K. Pomykala, R. Plantinga.*

Graduate Courses

510 Theological and Philosophical Hermeneutics (3). This course is an intensive study of the theory and methods of biblical interpretation developed in the context of modern theology and philosophy. Questions about language and events, experience and significance, and authority and community comprise the core of this course. *Staff.*

580 Perspectives, Programs, and Practices in Bible and Religion Curriculum (3). 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. *Staff.*

590 Independent Study. F, I, and S. *Staff.*

Sociology and Social Work

Professors C. Kreykes Brandsen (chair and director of Social Work), P. DeJong, B. Hugen (Social Work Practicum Coordinator), M. Loyd-Paige
Associate Professors F. De Jong, T. VandenBerg, K. Ver Beek
Assistant Professors K. Dougherty, M. Mulder, L. Schwander
Instructor S. Diepstra
Adjunct Instructor M. Baker

The department offers courses in sociology, criminal justice, social work, and anthropology. Sociology is the study of the principles of group relationships, social institutions, and the influence of the group on the individual. Social work is the study of theory and practice principles related to generalist, social work practice. Criminal justice is the study of the nature and treatment of crime in society and the interrelationships among crimi-

nal law, social order, and social justice. Anthropology is the study of the cultural values of peoples around the world and how these values become expressed in specific behavioral patterns. Programs in the department lead to a departmental major in sociology, a minor in sociology, a major in social work leading to a Bachelor of Social Work (B.S.W.) degree, and a minor in social work.

SOCIOLOGY MAJOR

Sociology 151
Sociology 255
Sociology 318
Sociology 320
Sociology 395
Six electives

SOCIOLOGY MINOR

Sociology 151
Six electives

SECONDARY EDUCATION

SOCIOLOGY MINOR

Sociology 151
Interdisciplinary 205
Sociology 253
Sociology 304
Psychology 310
One from Sociology 255 or 318
One other Sociology elective

Students who spend a semester at the Chicago Metropolitan Center may apply some of that work to a departmental major or minor.

For admission to the major program, a student must complete Sociology 151 with a minimum grade of “C” (2.0).

HONORS

Students wishing to graduate with honors in sociology must complete six honors courses with a minimum of three in sociology. They must also maintain a minimum GPA of 3.3 overall and 3.5 in sociology.

INTERNSHIPS

Sociology majors who have demonstrated ability in their sociology courses are invited to apply for an internship placement during their senior year. Sociology 380 offers a three-semester-hour credit experience in a professional setting delivering applied sociology or research services. Professional settings include agencies in the fields of criminal justice, cross-cultural development, family service, gerontology, mental

health, and urban planning. Internships can provide important background for later employment and graduate school. Interested students should contact M. Baker or C. Kreykes Brandsen.

SOCIAL WORK (B.S.W.)

The Bachelor of Social Work degree is designed for students who want to prepare for a career of Christian service as a professional generalist social worker. The program is carried out in the context of the mission of Calvin College, which is to offer a Christian education enriched by the insights of the Reformed heritage. Upon completion of the program, students are prepared for entry-level professional social work positions. The B.S.W. program is accredited by the Council on Social Work Education.

Students who wish to pursue a B.S.W. will normally make application to the Director of Social Work by February 15 of their sophomore year. Decisions about admission to the program are made by the Social Work Program Committee and are based on the following criteria: 1) Students must have earned at least 35 semester hours of credit and either have completed or currently be enrolled in Biology 115, Economics 151 or 241, Psychology 151, Sociology 151, and Social Work 240 and 250; 2) Students must have a minimum grade point average of 2.5 and a minimum grade of “C-” in each of the courses just specified; 3) Students must have completed or be completing at least 50 hours of social work volunteer or paid service and must submit a letter of reference from an appropriate supervisor; and 4) Students must submit a written personal statement, which includes information about their commitment to social work as a vocation and their relative strengths and areas for development as potential professional social workers. Since enrollment in the community-based practicum is limited, admission to the program is also limited and, therefore, fulfillment of the admission requirements can-

not guarantee admission.

The B.S.W. is composed of a social work major of twelve courses and several core requirements. The social work major includes theory courses, social work practice courses, policy and research courses, and practicum courses in community agencies. Once admitted to the program, B.S.W. stu-

dents must make separate application to the practicum. The core requirements include liberal arts offerings required of all students, with the exception of a physical world reduction, and an additional SSNA cognate. Some core requirements are specified as can be seen from the following model program:

| | |
|---|-----------------------|
| <i>First year</i> | <i>Semester hours</i> |
| English 101 | 3 |
| History of the West/World Core | 4 |
| Religion 121 or 131 | 3 |
| Biology 115 | 4 |
| Psychology 151 | 3 |
| Sociology 151 | 3 |
| Language 101 and 102 | 8 |
| Health and Fitness | 1 |
| RIT | 1 |
| Developing a Christian Mind Interim | 4 |
| <i>Second year</i> | <i>Semester hours</i> |
| Philosophical Foundations Core | 3 |
| Societal Structures in NA | 3 |
| Social Work 240 | 3 |
| Social Work 250 | 3 |
| Rhetoric in Culture | 3 |
| Language 201 and 202 | 8 |
| Health and Fitness | 1 |
| The Arts | 3 |
| Interim Elective | 3 |
| <i>Third year</i> | <i>Semester hours</i> |
| Literature | 3 |
| Biblical/Theological Foundations II | 3 |
| Social Work 255 | 4 |
| Global and Historical Studies | 3 |
| Social Work 320, 350, 360, and 370 | 13 |
| Health and Fitness | 1 |
| Electives | 3-6 |
| <i>Fourth year</i> | <i>Semester hours</i> |
| Social Work 371, 372, 373, 380, and 381 | 24 |
| Electives | 3-6 |
| Interim: Social Work 381 | 3 |

The social work courses are described on pages 234–235. A fuller description of the B.S.W. program is given in the *Social Work Handbook*, which can be obtained at the department office (Spoelhof Center 210).

HONORS

Students wishing to graduate with honors in social work must complete at least six honors courses of which at least three must be in social work. At least two courses must be chosen from Social Work 320, 350, or 360. The third course may be chosen from Social Work 255, 371, 372, or 373. Students must also maintain a minimum cumulative GPA of 3.3.

INTERNSHIPS

All social work students must complete a 400-hour internship during their senior year. Internships are completed in Western Michigan, through the Chicago Metropolitan Center, or in Honduras. For more information, contact the Social Work Practicum Coordinator. See Social Work 380 course description for further details.

SOCIAL WORK MAJOR

Social Work 240
 Social Work 250
 Social Work 255
 Social Work 320
 Social Work 350
 Social Work 360
 Social Work 370
 Social Work 371
 Social Work 372
 Social Work 373
 Social Work 380
 Social Work 381

SOCIAL WORK MINOR

Psychology 151 or Sociology 151
 Social Work 240
 Social Work 350
 Social Work 360
 Two from Social Work 250, 370, or Sociology offerings

COURSES

Sociology

151 Sociological Principles and Perspectives (3). F and S. This course is an introductory study of human social activity. The primary objectives of the course are: 1) To introduce students to origins, basic concepts, theories, and research methods of sociology, 2) to provide students with an overview of the structure, effects, promise, and limitations of our most basic social institutions, 3) to provide

students with an overview of the nature of social organization, 4) to encourage students to think analytically and critically about the society in which they live, and 5) to introduce students to the traditions of Christian reflection on social life. *K. Dougherty, M. Loyd-Paige, M. Mulder.*

153 Introduction to Cultural Anthropology (3). F and S. This course involves the study of cultural diversity around the globe, both historically and geographically. The course introduces the foundational elements of cultural anthropology including topics of field work, cultural relativism, ethnocentrism, participant observation, ethnography, ethnology as well as major anthropological theories. The course addresses the diversity, as well as commonality of cultural systems, both in time and space, through studying major components of cultural systems, such as kinship, religion, politics, and economics. Students are exposed to an awareness of their place within a particular cultural context, as well as their culture's place within a global and historical context. *T. Vanden Berg.*

210 The Criminal Justice System (3). F A survey and analysis of law enforcement, the courts, and corrections with special attention given to the ethical, legal, and social issues that must be confronted when these components of the traditional criminal justice system are expected to bring about social justice to offenders, victims, and society in general. Goals of restoration and moral accountability are also addressed. *Staff.*

250 Diversity and Inequality in the United States (3). F and S. This course analyzes the social meanings of our various identities (i.e., race-ethnicity, class, and gender); how these identities affect our self-concepts; and the impact of these identities upon our social and societal relationships. The primary objectives of this course are to study the social definitions of gender, race, and class; to examine the impact of these social constructs on human behavior, identity, and interactions with other persons; to develop a sociological understanding of the nature of structured inequality, and patterns of discrimination; to become familiar with social-scientific methods appropriate for the studying of diversity and inequality; and to understand the promise and challenge of biblical reconciliation for

seeing ourselves as image bearers of God and for easing the social tensions associated with diversity and inequality in the United States. *K. Dougherty, M. Loyd-Paige, M. Mulder.*

253 Intercultural Communication (3). F and S. An examination of the anthropological principles relating to cross-cultural communication. This examination requires an extensive comparison of the components of cultural systems and the nature of cultural dynamics. The areas of application include government, business, peace corps, development, and mission work, with special emphasis on the last two. Special topics include developing an appropriate attitude regarding indigenous cultures and the management of culture shock. Also cross-listed Communication Arts and Sciences 253. *T. Vanden Berg.*

255 Statistics and Research Design (4). F and S. This course is an introduction to statistics and computer application in one of the social sciences. Concepts and procedures taught include levels of measurement, measures of central tendency, correlation techniques, probability theory, and hypothesis tests. This course is intended to meet the core Mathematics requirement for Psychology majors and minors and students with declared majors in Sociology, Social Work, and Criminal Justice. Psychology students typically take this course in the sophomore year. Sociology, Social Work, and Criminal Justice majors usually take this course in the sophomore or junior year. Prerequisites: An introductory course in one of the social sciences (e.g., Sociology 151 or Psychology 151) and meeting the Calvin admission requirement in Mathematics. *F De Jong.*

302 Urban Sociology (3). * S. This course is an introduction to the purposes, problems, and prospects of cities in the United States and in other parts of the world. The theoretical portion of the course will introduce basic concepts of urban ecology and urban political economy. In the applied portion, functionalism and conflict theory will be addressed to help students to understand the interaction of social factors that produce change in cities and suburbs. The transformational theology of Abraham Kuyper will be used to focus Christian perspective. *M. Mulder.*

303 Anthropology of Religion (3). *. This course takes a comparative approach to the

study of religion — focusing on the universal characteristics of religious beliefs such as myth, ritual, and the sacred. Students will develop a critical understanding of the approach anthropology takes to the study of religion and will be encouraged to develop a critical understanding of that approach particularly from a faith perspective. Emphasis will also be given to grappling with the reality of personal faith in a global context of religious diversity, including the diversity in expression of Christianity. Not offered 2002-03. *T. Vanden Berg.*

304 The Family (3). 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. *C. Kreykes Brandsen.*

308 Demography and World Population Problems (3). S. 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. *M. Loyd-Paige.*

311 Religion and Society (3). *. The course will focus on recognizing the social aspect of religion and thinking critically about what influences the ways in which people practice their faith and what role faith plays in shaping human behavior. Particular attention is paid to the North American experience of Christianity. We will examine beliefs, practices, organizations, and cultures from a sociological perspective, looking as well at the historical and philosophical underpinnings of the perspective and what that means for our study of religion. Not offered 2002-03. *K. Dougherty.*

314 Contemporary Social Problems (3). F and S. The course will begin with a theoretical examination of social problems generally. Various contemporary social problems will be discussed with one selected for major emphasis. Not offered 2002-03. *Staff.*

315 **Sociology of Sport** (3). * 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. Not offered 2002-03. *Staff*.

316 **Social Gerontology** (3). S. A cross-cultural examination of how various societies react toward the elderly. Specific substantive issues included are: Discrimination against the elderly, familial relationships, social security, nursing home services, housing needs, and employment opportunities. There is an analysis of proposed changes in American society which would give assistance to senior citizens. *C. Kreykes Brandsen*.

317 **Death, Dying, and Bereavement** (3). *. This course investigates death-related behavior in America and cross-culturally through the lens of various sociological perspectives, seeking to understand patterns of social interaction surrounding and giving meaning to dying, death, and bereavement. Topics include: Death meanings and anxiety, religion and death-related customs, the dying process, hospice as a social movement, bioethical and legal issues, the funeral industry and death rituals, and social understandings of the bereavement process. Not offered 2002-03. *C. Kreykes Brandsen*.

318 **Sociological Theory** (3). 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: Sociology 151. *Staff*.

319 **Special Problems and Current Issues in Criminal Justice** (3). F and S. Concerted attention will be paid to a major criminal justice related issue or problem, focusing particularly on those for which a Reformed Christian sociological perspective is most strategic. Confronting the drug problem, and white collar crime are illustrations of these issues. Course may be taken two times in the study of different issues and problems for a total of 6 semester hours. *Staff*.

320 **Social Research** (3). F and 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: Sociology 151 and 255. *F. De Jong*.

380 **Internship in Sociology** (3). Students are placed in an internship setting related to an area of sociological practice or research. Students work eight hours per week under the direction of an on-site supervisor and participate in regular seminar meetings conducted by the college instructor. Internship experiences will assist students in integrating previously acquired sociological knowledge and research skills in a particular setting. Each student will author a project that communicates learning throughout the internship. Prerequisites: Senior sociology major, completion of Sociology 151, 255, and completion of or concurrent registration in Sociology 318 and 320. *M. Baker, C. Kreykes Brandsen*.

390 **Independent Study**.

395 **Sociology Integrative Seminar** (3). F. This course provides students with an opportunity to re-visit, at a more advanced level, the basic assumptions and concepts of the discipline of sociology; to explore the bearing of Christian faith, in particular a Reformed perspective, on the shaping of scholarly research; to consider what it means to practice sociology; and, in addition, students are challenged to synthesize, integrate, and assess what they have learned in sociology and to reflect on the role and contributions of the discipline in understanding current social issues in American culture. Prerequisites: Biblical Foundations I or Theological Foundations I, Developing a Christian Mind, and Philosophical Foundations. *Staff*.

IDIS 205 **Societal Structures and Education** (3). F and S. An examination of the interaction between education and the other systems and institutions (e.g., political, economic, and cultural) that shape society. This course will examine how education is shaped by and is reshaping these systems and institutions. Particular attention will be given to the impact of race, class, and gender on schooling and

society. Community-based research projects will challenge students to examine these issues in real-life contexts as well as introducing them to social science research methodology. Christian norms, such as social justice, will shape this critical analysis of the interaction between education and society. This class is appropriate for all students who are interested in education and society and meets a core requirement in the Societal Structures category. Credit for this course may be applied towards a Sociology major. *D. Isom.*

Graduate Courses

590 Independent Study. F, I, and S. *Staff.*

Social Work

240 Introduction to Social Work and Social Welfare (3). F and S. An introduction to the profession of social work and the field of social welfare. Attention is given to the development of social welfare as a social institution, including the development of philosophies, values, and attitudes, which influence the theory, policy, and practice of social work. Practice settings, professional roles, and value and ethical issues are also considered to increase awareness of the profession and aid students in considering social work as a career. *S. Diepstra, L. Schwander, C. Kreykes Brandsen.*

250 Diversity and Inequality in the United States (3). F and S. This course analyzes the social meanings of our various identities (i.e., race-ethnicity, class, and gender); how these identities affect our self-concepts; and the impact of these identities upon our social and societal relationships. The primary objectives of this course are to study the social definitions of gender, race, and class; to examine the impact of these social constructs on human behavior, identity, and interactions with other persons; to develop a sociological understanding of the nature of structured inequality, and patterns of discrimination; to become familiar with social-scientific methods appropriate for the studying of diversity and inequality; and to understand the promise and challenge of biblical reconciliation for seeing ourselves as image bearers of God and for easing the social tensions associated with diversity and inequality in the United States. *K. Dougherty, M. Loyd-Paige, M. Mulder.*

255 Statistics and Research Design (4). F and S. This course is an introduction to statistics and computer application in one of the social sciences. Concepts and procedures taught include levels of measurement, measures of central tendency, correlation techniques, probability theory, and hypothesis tests. This course is intended to meet the core Mathematics requirement for Psychology majors and minors and students with declared majors in Sociology, Social Work, and Criminal Justice. Psychology students typically take this course in the sophomore year. Sociology, Social Work, and Criminal Justice majors usually take this course in the sophomore or junior year. Prerequisites: An introductory course in one of the social sciences (e.g., Sociology 151 or Psychology 151) and meeting the Calvin admission requirement in Mathematics. *F. De Jong.*

320 Social Research. (3). See Sociology 320 for description. Prerequisites: Sociology 151 and Social Work 240 and 255.

350 Human Behavior and the Social Environment (4). F and S. A study of the person in her/his environment using a systems-based ecological model of human behavior. Knowledge about persons as biological, psychological, social, cultural, and spiritual creatures is integrated as the "person" is followed through the life cycle. Theoretical frameworks from prerequisite courses are integrated to enable students to assess micro and macro influences on human behavior. Prerequisites: Biology 115, English 101, Psychology 151, Sociology 151, and Social Work 240 and 250. *S. Diepstra.*

360 Social Welfare Policy Analysis (3). F This course provides students with an opportunity to re-visit, at a more advanced level, the basic assumptions and concepts of the discipline of sociology; to explore the bearing of Christian faith, in particular a Reformed perspective, on the shaping of scholarly research; to consider what it means to practice sociology; and, in addition, students are challenged to synthesize, integrate, and assess what they have learned in sociology and to reflect on the role and contributions of the discipline in understanding current social issues in American culture. Prerequisites: Social Work 240, History core, Sociology 151, and SSNA cognate. *L. Schwander.*

370 The Helping Interview (3). F and S. A course to teach students the basic skills necessary to conduct a helping interview. Students participate in videotaped role plays. The course also contains contextual material about ethical issues, a Christian view of relationship and interviewing, and interviewing people from different backgrounds. Prerequisites: Social Work 240 and 350 (or concurrent enrollment). *P. De Jong.*

371 Generalist Practice With Individuals and Families (3). F. A study of generalist social work practice within a "human behavior and social environment" and problem solving context. This course focuses on case management skills, interventions, and issues with individuals and families. Special attention is given to working with clients from different backgrounds. Prerequisites: Social Work 320, 350, 360, and 370. *P. De Jong.*

372 Generalist Practice With Groups, Organizations, and Communities (4). S. A study of generalist social work practice with groups with an emphasis on how the social work profession utilizes groups to accomplish individual, family, group, organizational, and community goals. Prerequisite: Social Work 371. *L. Schwander.*

373 Vulnerable Populations: Programs, Policies, and Procedures (3). F and S. This course integrates social welfare policies and generalist practice skills relevant to serving groups, which are economically or otherwise at risk. Prerequisite content in human diversity, policy, and practice is used to teach current programs intended to meet the needs of groups such as abused children and their fami-

lies, the frail elderly, and the persistently mentally ill. The course emphasizes how these approaches draw on several support systems including the family, community organizations, and state and federal resources. Prerequisite: Social Work 371. *B. Hugen.*

380 Social Work Practicum (5-F/S). F, I, and S. Students are placed in a community agency (minimum of 400 hours) under the supervision of a professional social worker. Students will engage in several social work roles and activities to continue to develop generalist practice skills and knowledge of the profession. Concurrent enrollment in Social Work 381 is required. Prerequisites: Previous or concurrent enrollment in Social Work 371, 372, and 373, admission to the B.S.W. program, and satisfactory completion of the practicum admission process. *P. De Jong, S. Diepstra, Staff.*

381 Integrative Studies Seminar. (4: 2 hours - I; 1 hour F and S for concurrent placements; 2 hours F or S for block placements). This course requires students to integrate the content of courses in the social work major and the practicum experience. Students draw on core concepts and principles from the profession and from the Christian faith as they discuss issues associated with professional role and identity. Concurrent enrollment in Social Work 380 is required. Prerequisites: Previous or concurrent enrollment in Social Work 371, 372, and 373, admission to the B.S.W. program, and satisfactory completion of the practicum admission process. Not offered 2002-03.

390 Independent Study.

Spanish

Professors M. Bierling, S. Clevenger, E. Miller (chair)

Associate Professors C. Slagter, D. Zandstra

Assistant Professors A. Hernandez Raney, O. Leder, M. Pyper, M. Rodríguez, A. Tigchelaar, D. TenHuisen

Instructor J. Versluys

Core Requirements. Students must demonstrate a competency in a foreign language that is equivalent to four years study in high school with a minimum grade of “C” each semester, or two years study in college. Normally, this is demonstrated by completing Spanish 101, 102, 201, 202; Spanish 121, 122, 123; Spanish 203; or by examination. Students will be placed in classes at their level of ability as determined by placement examinations. Successful completion of Spanish 123 or 202 or 203 fulfills the foreign language core requirement.

Major Requirements. A minimum grade of “C” (2.0) in Spanish 301 is required as a prerequisite for any concentration in the Spanish Department. Programs for students wishing to major in Spanish are worked out individually with the appropriate departmental advisor.

SPANISH MAJOR (30-32 hours)

Spanish 202 or 203 *

Spanish 301

Spanish 302

Spanish 329

One literature course from Spanish 330-333

Two literature courses from Spanish 361-368, one of which must be taken on campus

Advisor-approved electives to reach a minimum of 30 hours

SPANISH MINOR (20-22 hours)

Spanish 202 or 203 *

Spanish 301

Spanish 302

Spanish 329

One literature course from Spanish 330-333

Advisor-approved electives to reach a minimum of 20 hours

The advisors for these programs are S. Clevenger and A. Tigchelaar.

SECONDARY EDUCATION MAJOR IN SPANISH (33-35 hours)

Spanish 202 or 203 *

Spanish 301

Spanish 302

Spanish 329

One literature course from Spanish 330-333

One literature course from Spanish 361-368

Spanish 340

Spanish 357

Culture course or study abroad

Advisor-approved electives to reach a minimum of 33 hours

SECONDARY EDUCATION MINOR IN SPANISH (23-25 hours)

Spanish 202 or 203 *

Spanish 301

Spanish 302

Spanish 329

Spanish 340

Spanish 357

Advisor-approved electives to reach a minimum of 23 hours

K-12 SECONDARY TEACHING MAJOR IN SPANISH (36-38 hours)

Spanish 202 or 203 *

Spanish 301

Spanish 302

Spanish 329

One literature course from Spanish 330-333

One literature course from Spanish 361-368

Spanish 340

Spanish 356

Spanish 357

Culture course or study abroad

Advisor-approved electives to reach a minimum of 36 hours

The advisor for the three secondary programs above is D. Zandstra.

ELEMENTARY EDUCATION MAJOR IN SPANISH (30-32 hours)

Spanish 202 or 203 *

Spanish 301

Spanish 302
 Spanish 329
 One literature course from Spanish 330-333
 Spanish 340
 Spanish 356
 Culture course or study abroad
 Advisor-approved electives to reach a minimum of 30 hours

ELEMENTARY EDUCATION MINOR IN SPANISH (20-22 HOURS)

Spanish 202 or 203 *
 Spanish 301
 Spanish 302
 Spanish 356
 Advisor-approved electives to reach a minimum of 20 hours

* Students beginning their language study at Calvin College at the Spanish 301 level may take a credit exam for Spanish 202 or may take additional electives at the advanced level.

BILINGUAL EDUCATION GROUP MINOR FOR ELEMENTARY EDUCATION (24 hours)

Interdisciplinary 301
 Spanish 310 **
 Spanish 340 **
 Spanish 356 **
 English 334 or Education/CAS 311
 History 238
 History 229, 254, or 356
 Political Science 101

BILINGUAL EDUCATION GROUP MINOR FOR SECONDARY EDUCATION (24 hours)

Interdisciplinary 302
 Spanish 310 **
 Spanish 340 **
 English 334
 History 238
 History 229, 254, or 356
 Political Science 101
 Sociology 250

** The Bilingual Education Group Minors assume a Spanish Teaching Major or Minor. Students in this program may not double count courses for both the bilingual and the Spanish concentrations.

The advisor for the elementary education and bilingual programs is M. Pyper.

ENGLISH AS A SECOND LANGUAGE ENDORSEMENT - ELEMENTARY OR SECONDARY EDUCATION (33 hours)

CAS 216
 English 334
 English 335
 English 338
 Interdisciplinary 301 (Elementary) or 302 (Secondary)
 Sociology 253
 An approved elective: See the *Teacher Education Guidebook* or an ESL advisor.

Note: Students pursuing this endorsement must complete a semester of directed teaching in a regular classroom and an additional semester of directed teaching in an ESL classroom (Education 348 or 349).

Note: A non-education minor in ESL is also available and does not require the directed teaching or Interdisciplinary 301 or 302.

The advisors for the ESL programs are M. Pyper and E. Vander Lei.

INFORMATION FOR EDUCATION STUDENTS

1. Students interested in the various teacher education programs in Spanish should consult the *Teacher Education Program Guidebook* (available from the Education Department) for a listing of requirements and should meet with the appropriate Spanish Department advisor as soon as possible to declare their interest in a particular program.

2. All students in the departmental education programs must pass, by their junior year, an oral and written Spanish Department proficiency examination prior to enrolling for the teaching internship. The proficiency examination is offered four times each school year in September, November, February, and April. There is no charge to a student for taking the proficiency examination the first time, but a \$25.00 fee will be assessed for each subsequent examination. Further information on the proficiency examination is available from Spanish Department advisors.

3. The teaching internship in secondary Spanish is available only in the spring semester.

CREDIT/EXEMPTION EXAMS

Credit and/or exemption exams in the department will be given on the same dates as the proficiency examinations.

OFF-CAMPUS PROGRAMS

Spanish Studies in Spain. During the interim and spring semester, Calvin offers a full-time core Spanish program in Denia, Spain. Students can complete the courses Spanish 101, 102, 201, and 202 to satisfy the college foreign language requirement for the bachelor's degree, as well as earn 3 hours of interim credit. Calvin also offers an advanced language and literature program during interim and the spring semester in Denia. Students in the advanced program take 15-17 semester hours towards a Spanish major or minor. Spanish 301 is a prerequisite for the advanced program. The advisor for this program is C. Slagter.

Spanish Studies in Honduras. During the last two weeks of August and the fall semester, Calvin offers an orientation and advanced Spanish program for majors and minors in Tegucigalpa, Honduras. Intensive study of Spanish is combined with an exploration of the meaning of faith in a third-world setting. Students live individually with Honduran families, participate in organized excursions, and attend classes on the campus of the Universidad Pedagógica. Students earn 15-18 semester hours of credit in courses such as advanced conversation, linguistics, Latin American literature and culture, and third world development. Prerequisite: Spanish 301. For further information, contact E. Miller or M. Bierling of the Spanish Department, or the Off-Campus Programs Office.

Development Studies in Honduras. During the spring semester, this program in Third World Development Studies takes place in Tegucigalpa, Honduras. Students take courses in development studies (in English), as well as one or two language courses for Spanish credit, normally from the following offerings: Spanish 102, 123/202, 302, Latin American culture, or a survey literature course (according to demand). Majors and minors participating in this program should plan to take Spanish 302 in Honduras rather than on campus. The advisors for this program are M. Bierling and E. Miller.

Latin American Studies Program (LASP). This fall or spring semester program in San Jose, Costa Rica, is endorsed by Calvin and administered by the Council of Christian Colleges and Universities, of which Calvin is a member. Students are required to take Spanish 301, but not Spanish 302, on campus before embarking on the program. The advisors for this program are M. Bierling and E. Miller.

Interim in the Yucatan (SPAN W60/W80). Students in this course spend three and a half weeks immersed in Mexican culture in Merida, Yucatan, living with families and attending daily lecture classes. Students also take excursions to Mayan ruins, attend religious and cultural events, and keep detailed journals. The instructor for Interim 2003 is O. Leder.

COURSES

Language Courses

101 **Elementary Spanish I** (4). F. An introductory course in the use and comprehension of oral and written Spanish. *Staff.*

102 **Elementary Spanish II** (4). S. A continuation of Spanish 101. *Staff.*

121/122/123 **Introductory/Intermediate Spanish** (4,3,4). F, I, and S. An intensive course for students who have had at least two years of Spanish in high school, but who, on the basis of a placement test, are not adequately prepared for the 200 level. In this rapid-track course, students will complete the equivalent of four semesters of language study in one year. *Staff.*

201 **Intermediate Spanish I** (4). F. Review of essential grammatical structures and further training in spoken and written Spanish. Cultural and literary readings. Prerequisites: Spanish 101 and 102 or other equivalents. *Staff.*

202 **Intermediate Spanish II** (4). S. A continuation of Spanish 201. *Staff.*

203 **Advanced Intermediate Spanish** (4). F. This is a fourth semester course, offered in the fall, intended specifically for students who have successfully completed at least three years of high school Spanish. There is an accelerated review of essential grammar topics, as well as a study of literary and cultural readings. *Staff.*

301 **Advanced Grammar and Composition** (3). F and S. An intensive review of Spanish grammar, integrated with extensive practice in the varieties of written communication. Prerequisite: Spanish 202 or its equivalent. *Staff*.

302 **Advanced Conversation** (3). F and S. This course increases fluency in spoken Spanish through vocabulary acquisition, readings, conversation, debates, and oral presentations. Prerequisite: Spanish 202 or its equivalent. *M. Roldriguez, D. Zandstra*.

340 **Spanish-English Linguistics** (3). * F and S. An examination of the differences between English and Spanish, particularly those involving sound, spelling, structure, and vocabulary, in order to improve the students' communication skills and to understand the errors made by those learning a second language. This course is required for elementary teaching majors, secondary teaching majors and minors, and bilingual education minors. Prerequisite: Spanish 301. *M. Bierling, A. Tigchelaar*.

Literature Courses

329 **Introduction to the Study of Hispanic Literature** (3). F and S. This course introduces students to the major movements and genres of Hispanic literature and to the accompanying vocabulary. Students learn how to read and evaluate literature in a second language through short prose, drama, and poetic texts, and they sharpen their skills in critical writing and literary analysis. This course is designed to prepare students for survey and advanced-level literature courses in the Spanish Department. Oral presentations and/or research paper required. Prerequisite: Spanish 301 or concurrent registration with Spanish 301. *S. Clevenger, D. Zandstra*.

330 **Survey of the Literature of Spain I** (3). S, alternate years. This course is an overview of literary masterpieces of Spain from the Middle Ages through the Golden Age. Discussion centers on selections from major works and their relationship to society and culture then and now. The classes are conducted in Spanish. Prerequisites: Spanish 301 and Spanish 329 (or concurrent registration with Spanish 329). *D. Ten Huisen*.

331 **Survey of the Literature of Spain II** (3). S, alternate years. This course is an overview of the literary masterpieces of Spain from the Enlightenment Age through the present. Discussion centers on selections from major works and their relationship to society and culture then and now. The classes are conducted in Spanish. Prerequisites: Spanish 301 and Spanish 329 (or concurrent registration with Spanish 329). Projected offering: Spring 2004.

332 **Survey of the Literature of Latin America I** (3). F, alternate years. This course is an overview of literary masterpieces of Latin America from the Colonial period through Modernism. Discussion centers on selections from major works and their relationship to society and culture then and now. The classes are conducted in Spanish. Prerequisites: Spanish 301 and Spanish 329 (or concurrent registration with Spanish 329). Projected offering: Fall 2003.

333 **Survey of the Literature of Latin America II** (3). F, alternate years. This is an overview of the literary masterpieces of Latin America from Modernism to the present. Discussion centers on selections from major works and their relationship to society and culture then and now. The classes are conducted in Spanish. Prerequisites: Spanish 301 and Spanish 329 (or concurrent registration with Spanish 329). *D. Ten Huisen*.

361 **Latin American Literature from the Colonial Period through Romanticism** (3). * F This course focuses on the literature of Latin America from the Encounter (1492) through Independence (ca. 1820). The following genres are analyzed: Colonial chronicles, epic and lyric poetry, mission and court drama, and the picaresque novel. While the Renaissance, Baroque, and Neoclassic periods will be covered within the American context, special emphasis will be placed on the hybrid nature (European and indigenous, literary and historical) of colonial texts. Oral presentations and research papers are required. Aside from the history text on colonial Latin America, all readings will be in Spanish. Prerequisite: One course from Spanish 330, 331, 332, or 333, or permission of the instructor. Projected offering: Fall 2003.

362 **Latin American Literature from Pre-Modernism to 1945** (3). * F This course fo-

cuses on the literature of Latin America from Pre-Modernism to 1945. The following genres are analyzed: Pre-Modernist poetry, short story, and essay; Modernist poetry, short story, and essay; poetry and short story of the Vanguardia. Oral presentations and research papers are required. Prerequisite: Spanish 330, 331, 332, or 333, or permission of the professor. Projected offering: Fall 2004.

363 Contemporary Latin American Literature (3). * F This course focuses on the recent literature of Latin America. The following genres are analyzed: Contemporary novels, poetry, and short stories. Oral presentations and research papers are required. Prerequisite: Spanish 330, 331, 332, 333, or permission of the professor. *D. Zandstra.*

366 Spanish Literature from the Middle Ages through the Renaissance (3). * S. This course focuses on the development of Spanish literature from its inception through the Renaissance. The following genres are analyzed: Epic and lyric poetry; eclogues and pre-Golden Age drama; and the sentimental, the pastoral, and the picaresque novel. Oral presentations and research papers are required. Prerequisite: Spanish 330, 331, 332, 333, or permission of the instructor. Projected offering: Spring 2005.

367 Spanish Literature of the Golden Age (3). * S. This course focuses on the literature of the sixteenth and seventeenth centuries. The following genres are analyzed: Renaissance and Baroque poetry, drama of the Lope and Calderon cycles, the origins of the modern Spanish novel, and the literature of the Counter-Reformation. Oral presentations and research papers are required. Prerequisite: Spanish 330, 331, 332, 333, or permission of the instructor. *A. Tigchelaar.*

368 Spanish Literature from the Eighteenth Century to the Present (3). * S. This course focuses on the Spanish literature of the eighteenth century to the present. The following genres are analyzed: Neoclassic drama, Romantic drama and poetry, essays and poetry of the Generation of '98, and twentieth century poetry, drama, and novel. Oral presentations and research papers are required. Prerequisite: Spanish 330, 331, 332, 333, or permission of the instructor. Projected offering: Spring 2004.

390 Independent Study. * F, I, and S. Prerequisite: Permission of the department chair.

395 Seminar (3). *.

Culture Courses

310 Hispanic Culture in the United States (3). * F and S. 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 designed 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. Field trip required. Prerequisite: Spanish 301 or permission of the instructor. *A. Raney.*

311 Hispanic Civilization and Culture (3). S, alternate years. A study of the history and culture of Spanish and Latin American social, political, and religious institutions. The course will also incorporate discussion of issues currently facing Hispanic peoples. Reading materials include literary and non-literary sources. Conducted in Spanish. Prerequisite: Spanish 301. *O. Leder.*

320 Business Spanish (3). * S, alternate years. An introduction to the terminology and standard forms of oral and written communication in Spanish relating to the fields of business and economics. The course also considers the cultural and economic context of business practices in the Hispanic world. The course is designed for advanced students of Spanish. Conducted in Spanish. Prerequisite: Spanish 301. Projected offering: Spring 2004. *S. Clevenger.*

Education Courses

356 Foreign Language Education in the Elementary School (3). * I. Theory and practice of foreign language teaching in the elementary school. Study of language skill development, second language acquisition, methodologies, curricula and programs. Off-campus school visits for observation and aiding experience. To be taken prior to Education 346 and Spanish 359. Required for elementary and K-12 endorsement. *M. Pypser.*

357 Introduction to Foreign Language Pedagogy (3). F. An introduction to the major prin-

ciples and practices of foreign language pedagogy, offering a study of various methodologies and the major controversies associated with them. The course explores how a Christian approach to education affects foreign language pedagogy and how foreign language pedagogy interacts with the language learner's personal growth. It also introduces the prospective educator to the teaching of the basic skills, to issues in evaluation and assessment, and the use of technologies in the foreign language classroom. This course should be taken in the junior or senior year, prior to student teaching. Required for secondary certification. Prerequisite: Completion of or concurrent registration in Education 301/303. *D. Smith.*

358 Aiding in the Foreign Language Classroom (3). I. Students participating in this seminar will plan and facilitate small group sessions for Spanish 122. Morning activities include meeting with other aides and the professor, observing master teachers, and aiding master teachers in teaching. Afternoon activities include leading their own sessions with Spanish 122 students and planning lessons, materials, and activities under the supervision of the professor. Students will be evaluated based on their competency in the Spanish language, professional evaluations of teaching sessions and lesson plans/materials, participating in class discussions, daily diaries, and an oral presentation. Completion of this course counts toward a Spanish major or minor. Prerequisite: Spanish 301 or 302 with a grade of "B" or better. *S. Clevenger.*

359 Seminar in Secondary Foreign Language Pedagogy (3). S. A seminar reinforcing the major principles and practices of foreign language pedagogy on the secondary level for students during their semester of directed teaching. The course will provide an opportunity for collaborative work on putting theoretical and pedagogical matters of immediate concern into a practical framework. This course is required concurrently with Education 346. This course does not count as part

of the major or minor program. Prerequisites: Education 301/303 and successful completion of the department proficiency exam. *M. Pyper.*

IDIS 301 Introduction to Second Language Education for Elementary Teachers (3). F. This course prepares students to teach in classrooms where English is the second language. In this course, students apply their knowledge of second language acquisition to the classroom setting and learn to recognize linguistic, cognitive, affective, cultural, and social facets influencing the acquisition of a second language. Course topics include student placement, classroom methods and materials, curriculum, and assessment. Students in the Interdisciplinary ESL minor observe in elementary classrooms. Students with a bilingual minor take this course prior to their student teaching semester. They will also observe in elementary classrooms. Students in the ESL minor endorsement program (for education students) for Michigan Teacher Certification must take this course *in the same semester* as Education 348. *M. Pyper.*

IDIS 302 Introduction to Second Language Education for Secondary Teachers (3). F. This course prepares students to teach in classrooms where English is the second language, helping them bring their knowledge of applied linguistics to classroom settings. In this course, students recognize linguistic, cognitive, affective, and social factors that influence the acquisition of another language. Course topics include student placement, classroom methods and materials, curriculum, and assessment. Students in the bilingual program take this course before student teaching and observe/aide in secondary or adult education classrooms. Students in the Interdisciplinary ESL non-educational minor observe in secondary or adult education classrooms. Students in the ESL minor leading to an ESL endorsement on a Michigan Teacher's Certificate must take Education 349 concurrently with Interdisciplinary 302. *M. Pyper.*

Third World Development Studies

The Third World Development Studies minor consists of six courses, three required and three elective, which together comprise a coherent, planned, interdisciplinary program in development studies. Participation in off-campus experiences in the Third World is normally expected. Up to 9 semester hours from semester-long Third World programs may apply to the minor. One off-campus interim in the Third World may apply. Participation in the Calvin College semester in Honduras satisfies three courses in the minor; one of these three Semester in Honduras courses may take the place of Third World Development Studies 201 in the minor. The program director is R. Hoksbergen, of the Department of Economics and Business. Along with R. Hoksbergen, R. DeVries, of the Political Science Department, and T. Vanden Berg, of the Sociology Department serve as advisors for the program.

THIRD WORLD DEVELOPMENT STUDIES MINOR

Third World Development Studies 201

Third World Development Studies 395

Sociology 253

Three electives from:

CAS 330

Economics and Business 337, 338

Environmental Studies 210, 302

French 219

Geography 110, 210, 230, 240, 242

History 231, 232, 233, 235, 236, 238, 241, 242, 245, 246, 338 Political Science 207, 276, 277, 279, 295B, 308, 309

Religion 252, 351

Sociology 153, 308

Spanish 311, 332, 333, 361, 362, 363

Selected courses from off-campus programs, and one interim

COURSES

201 Introduction to Third World Development (3). S. An introduction to the history of Third World development, to the realities of contemporary life in the world's low-income countries, and to competing theoretical perspectives on development and change. The course addresses cultural, social, political, religious, economic, and environmental elements of people's lives in the Third World. It also surveys and critiques such dominant perspectives on development as modernization, dependency, world systems, historical culturalism, and sustainable development. Prerequisite: Sophomore status. *R. Hoksbergen, T. Kuperus.*

359 Internship in Development (12). F and S. Internships will typically take place in collaboration with the Christian Reformed World Relief Committee (CRWRC), and will gener-

ally involve CRWRC's placement of the student with one of its partner organizations, either in a developing nation or in North America. Placements in the CRWRC home offices in the US and Canada are also possible. Students will work for four to five months with this partner in areas of development work including community development, micro-enterprise and business development, literacy and adult education, organizational capacity building, data gathering, basic health, disaster preparedness and response, refugee assistance and resettlement, local church-based development, and peace and reconciliation work. Placement will occur through an application and interview process. See one of the Third World Development Studies advisors for more information. Prerequisites: Third World Development Studies 201 or its equivalent, Sociology 253, a semester educational experience in a developing nation or its equivalent, appropriate language capabilities, and junior/senior status.

395 Seminar in Third World Development Studies (3). S. A study of some of the major current problems and issues in development. The course has three main objectives: First, to acquaint students with the current state of the debate on development; second, to analyze the ethical foundations of the various prominent voices in the debate; and third, to cultivate Christian thinking on development questions. Emphasis is placed on oral and written reports and on a senior research project. Prerequisite: Senior Third World Development Studies minor status. *R. Hoksbergen, G. Byker, T. Kuperus.*

SOC253 See Sociology 253 for a complete course description.

Interim 2003

(Unless otherwise indicated, all courses are 3.0 semester hours).

| NUMBER | TITLE | INSTRUCTOR |
|----------|---|---------------------------------------|
| IDIS W11 | Classical, Early Christian, and Modern Culture – <i>Off campus in Greece</i> | K. Bratt M. Williams |
| IDIS W12 | A Christian Approach to Development Work – <i>Off campus in Tanzania</i> | C. Moody A. Mpesha |
| IDIS W13 | The Leader Within: Reflections on Christian Leadership – <i>Off campus</i> | J. Britton K. Schutte |
| IDIS W14 | Engineering and Business for the International Market – <i>Off campus</i> | M. Kuyers N. Nielsen P. Ribeiro |
| IDIS W15 | Dutch Landscapes: Society, Technology, and Environment – <i>Off campus</i> | B. Vanden Bosch H. Aay |
| IDIS W16 | Service Learning and Youth Ministries – <i>Off campus</i> | R. Hoeksema D. Ackerman |
| IDIS W17 | Backcountry Yellowstone – <i>Off campus</i> | D. De Graaf D. Bosch |
| IDIS W18 | Religions and Cultures of the Pacific – <i>Off campus</i> | D. Van Baak W. Stob |
| IDIS W19 | The Jamaican Journey: Jamaican History and Hope for Development – <i>Off campus</i> | L. Schwander |
| IDIS W20 | Exploring China (Summer Session, 2003) – <i>Off campus</i> | T. Vanden Berg L. Herzberg |
| IDIS W21 | Fitness and Good Nutrition as a Lifestyle: Biking in Australia – <i>Off campus</i> | R. Blankespoor L. Louters |
| IDIS W22 | Teaching English in Korea – <i>Off campus</i> | P. Goetz E. Vander Lei |
| IDIS W23 | Words and the Work of Worship: On the Cutting Edge of Worship Reform, Past and Present (Summer Session, 2003) – <i>Off campus</i> | D. Rienstra R. Rienstra |
| IDIS W24 | So Why Are They Trashing Starbucks?: Globalization and the Poor – <i>Off campus</i> | K. Ver Beek |
| IDIS W25 | What Grand Rapids and New York Have in Common: An Analysis of Urban Missions and Race Relations – <i>Off campus</i> | J. Kooreman P. Szto |
| IDIS W26 | Picture This: Dynamic Storytelling | D. Hettinga F. Speyers |
| IDIS W27 | Celebrating Sexuality: Dating, Mating, and Relating | C. Blankespoor J. Bonnema |
| IDIS W28 | Community Development in Practice: Promoting Participation and Local Ownership | R. Hoksbergen |
| IDIS W29 | Literacy and Urban Children | A. Post |
| IDIS W30 | An Inside Look at <i>The January Series</i> | R. Honderd |
| IDIS W31 | Dancing in the Elementary Classroom | E. Van't Hof |
| IDIS W32 | “Elementary, My Dear Watson” | D. Ratzsch |
| IDIS W33 | Fish: A Natural Resource | C. Huisman R. Terborg |
| IDIS W34 | The Art of Life and Death: Testimony from Film, Music, and Literature | R. Plantinga T. Thompson |
| IDIS W35 | “Nudists, Sodomites, and Cannibals:” How the Old World Saw the New | D. Ten Huisen |

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| IDIS W36 | Adventure Therapy: An Experiential Approach to Facilitation | M. Bowers D. Vermilye |
| IDIS W37 | Can They Do That to Me?: Practical Law for People Living in America | P. Hoekwater M. Reiffer |
| IDIS W38 | Creativity in Science and Art | C. Young |
| IDIS W60 | Computer Animation and Video Production | C. Plantinga H. Plantinga |
| IDIS W61 | Mark Twain on God, Religion, and the Bible | D. Harlow |
| IDIS W62 | Independent Study at L'Abri Fellowship, Switzerland – <i>Off campus</i> | L. Hardy |
| IDIS 213 | Teaching Science in Elementary School (2.0 hrs.) | J. Jadrich |
| ART W80 | Jewelry: Its Meaning and Making | H. Bonzelaar |
| ASI 310 | Biology in Winter (four semester hours) – <i>Off campus</i> | Staff |
| ASI 346 | Winter Stream Ecology (four semester hours) – <i>Off campus</i> | Staff |
| ASI 350 | Environmental Ethics (four semester hours) – <i>Off campus</i> | Staff |
| ASI 427 | Ecology of the Indian Tropics (four semester hours) – <i>Off campus</i> | Staff |
| BIOL W60 | Exploring Medical Missions, Ecuador – <i>Off campus</i> | P. Tichelaar |
| BIOL W61 | How Common Drugs Work | R. Nyhof |
| BIOL W80 | This Changing Earth: Biological Evolution, Creation, and Human Responsibility | D. Warners |
| BIOL 394 | Perspectives in Biotechnology | D. Koetje |
| BUS W10 | Personal Finance | R. De Vries |
| BUS W80 | Financial Markets and Institutions: From Main Street to Wall Street – <i>Off campus</i> | D. Attebury R. Slager |
| BUS W81 | Management in Multi and Transnational Settings: The U.S. and Europe – <i>Off campus</i> | T. Etter E. Van Der Heide |
| BUS W82 | Financial Planning | D. Cook |
| CAS W11 | Theatre in London and the British Isles – <i>Off campus</i> | M. Page S. Sandberg |
| CAS W12 | Hollywood and American Culture – <i>Off campus</i> | J. Korf W. Romanowski |
| CAS W40 | The Theatre for Youth Experience | D. Leugs T. Ter Haar |
| CHEM W80 | Environmental Chemistry | D. Mc Carthy |
| CHEM 271 | Environmental Chemistry | D. Mc Carthy |
| CLAS W10 | Demon, I Adjure You: Magic and Witchcraft in the Ancient Greco-Roman World | J. Winkle |
| CPSC 300 | Special Topics in Computer Science: High Performance Computing | J. Adams |
| DUTC W40 | Dutch Interim Abroad – <i>Off campus</i> | H. De Vries |
| ECON W80 | Globalization: The New World Economy? | J. Tiemstra |
| EDUC W60 | Interim in Comparative Education: Amsterdam – <i>Off campus</i> | L. Stegink |
| EDUC 216A | Educating Exceptional Children | Staff |
| EDUC 216B | Educating Exceptional Children | Staff |
| EDUC 216C | Educating Exceptional Children | Staff |
| ENGL W40 | New England Saints – <i>Off campus</i> | G. Fondse G. Schmidt |
| ENGL W41 | J.R.R. Tolkien's Middle-Earth | C. Engbers |
| ENGL W42 | Jane Austen and Virginia Woolf | J. Holberg |
| ENGL W43 | Frederick Buechner: An Introduction | W.D. Brown |
| ENGL W80 | Dostoevsky | E. Ericson |
| ENGL W81 | Shakespeare II: The Return of Shakespeare | K. Saupe |
| ENGL 262 | Business Writing | N. Hull |

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| ENGL 339 | English Grammar | W. Vande Kopple J. Vanden Bosch |
| ENGR W80 | Process Modeling Dynamics and Control | Jer. Van Antwerp |
| ENGR W81 | Advance Computer Architecture with VHDL | S. Vander Leest |
| ENGR W82 | Finite-Element Analysis | R. De Jong |
| ENGR W83 | Masonry Design | L. De Rooy |
| ENGR W84 | Efficient Engineering with Plastics: Process and Design | L. Van Poolen |
| FREN 112 | Multisensory Structured French II (core) | I. Konyndyk |
| FREN 122 | Intermediate French (core) | L. Mathews Staff |
| GEOL W40 | Geology and Hydrology of Southwestern Deserts (Summer Session, 2003) – <i>Off campus</i> | R. Stearley |
| GERM W80 | German Interim Abroad – <i>Off campus</i> | D. Smith |
| GERM W81 | German Theater Production: <i>Biedermann und die Brandstifter</i> | J. Lamse |
| GERM 122 | Intermediate German (core) | M. Buteyn |
| GREE 101RA | Review Greek (non-credit) | M. Gustafson |
| GREE 101RB | Review Greek (non-credit) | M. Gustafson |
| HE 307 | Community Health | J. Walton |
| HIST W10 | Vietnam: Legacy of Empire and War – <i>Off campus</i> | W. Van Vugt |
| HIST W11 | African Christianity: The History of the Evangelization of a Continent | W. Boer |
| HIST W12 | Museums: A Place to Work? | D. Postema-George |
| HIST W60 | Total War: A History of World War II in Europe | F. Roberts |
| HIST W61 | The World of <i>Don Quixote</i> | K. van Liere |
| HIST W62 | The History of California | R. Wells |
| HIST W63 | Technology and Society in U.S. History | G. Zylstra |
| HIST 294 | Research Methods in History (two semester hours) | K. Maag |
| MATH W10 | Cryptography: The Science Behind Secret Codes | E. Fife |
| MATH W80 | Chaos, Nonlinear Dynamics, and Applications | T. Scofield R. Wagstrom |
| MATH W81 | Graph Theory | M. Stob |
| MATH W82 | Curricular Materials for Elementary School Mathematics | J. Koop |
| MATH 160 | Elementary Functions and Calculus (core) | G. Venema |
| MUSC W40 | J.S. Bach: Pre-Modern Music for a Post-Modern World | C. Stapert |
| MUSC W41 | Introduction to the Fundamentals of Music Theory | J. Hamersma |
| MUSC W60 | The African Roots of Gospel Music: History, Culture, Music, and Dance of West Africa: Choir Tour – <i>Off campus</i> | R. Jelks C. Sawyer Staff |
| NURS 459A | Nursing Practicum (two semester hours) | B. Feikema |
| NURS 459B | Nursing Practicum in New Mexico (two semester hours) – <i>Off campus</i> | |
| PE W10 | Women's Health | D. Bakker |
| PE W11 | Sports and the Media | J. Pettinga J. Timmer |
| PER 131A | Badminton I (one semester hour) | J. Kim |
| PER 131B | Badminton I (one semester hour) | J. Kim |
| PER 135A | Volleyball I (one semester hour) | N. Van Noord |
| PER 137A#+ | Bowling (one semester hour) | Staff |
| PER 140A | Swim I (one semester hour) | N. Meyer |
| PER 155A | Ballet I (one semester hour) | J. Genson |
| PER 173A | Basketball (one semester hour) | K. Gall |
| PER 176A#+ | Ice Skating (one semester hour) | N. Meyer |
| PER 177A#+ | Downhill Skiing (one semester hour) | D. Gelderloos |

PER 177B#+ Downhill Skiing (one semester hour)
 PER 186A#+ Gymnastics (one semester hour)
 PER 198A#@Scuba (one semester hour)
 PHIL W10 The Expectations of Morality
 PHYS W60 Introductory Biophysics
 POLS W40 Can They Do That to Me?: Practical Law for
 People Living in America
 POLS W80 United Nations in New York – *Off campus*
 PSYC W40 Social Psychology in Film
 PSYC W41 The Psychology of Interpersonal Relationships
 PSYC W80 Children and Stress
 PSYC W81 Health Psychology
 PSYC W82 Psychopathology in Film
 PSYC W83 Helping Skills
 RECR 308 Recreation Program and Facility Management
 REL W40 The Ethics of Romance
 REL W80 Calvin's Institutes
 REL W81 New Frontiers in Global Christianity
 SOC W40 Can They Do That to Me?: Practical Law for
 People Living in America
 SOWK 380 Social Work Practicum
 SPAN W60 Interim in the Yucatán – *Off campus*
 SPAN W80 Interim in the Yucatán – *Off campus*
 SPAN 122 Intermediate Spanish (core)
 SPAN 356 Foreign-Language Education in the Elementary School
 SPAN 358 Aiding in the Foreign-Language Classroom
 STFR W40 Interim in France – *Off campus*
 STFR W85 Interim in France – *Off campus*
 STSP 101 Introduction to the Spanish Language – *Off campus*

 STSP 312 Contemporary Spain – *Off campus*

D. Gelderloos
 G. Van Anandel
 G. Kimball¹
 G. Mellema
 P. Harper
 P. Hoekwater
 M. Reiffer
 R. De Vries
 M. Bolt
 A. Shoemaker
 L. De Haan
 P. Moes
 S. Stehouwer
 J. De Boe
 Staff
 L. Smit
 A. Griffioen
 C. Farhadian
 P. Hoekwater
 M. Reiffer
 B. Hugen
 O. Leder
 O. Leder
 Staff
 M. Pyper
 S. Clevenger
 O. Selles
 O. Selles
 C. Slagter
 A. Tigchelaar
 C. Slagter
 A. Tigchelaar

Fee required. Pick up information in P.E. Office.

+ Class meets off campus.

@ Elective only, does NOT fulfill core.

Financial Information

Tuition and Fees

Tuition for the academic year is \$15,750; on-campus housing with a 21 meal plan is \$5,485; and the estimated cost for textbooks and classroom supplies is \$500.

Students taking fewer than twelve credit hours in a semester will be charged on a per-semester hour basis. Those taking more than 16 credit hours in a semester will be charged at the per-semester hour rate for the additional courses. The interim is considered a separate course for which there is no charge if the student completes at least 12 semester hours in either semester, unless the student enrolls in more than 4 semester hours.

Most Calvin College students receive financial assistance from the grant and scholarship programs. A special grant-in-aid, called a Denominational Grant is available to members of the Christian Reformed Church in North America to reflect the direct support such students and their families provide the college through the church.

Basic Charges

| | |
|--|----------|
| Tuition, full-time load (12-16 semester hours): | \$15,750 |
| Tuition, per-semester hour rates: | |
| 1-5 hours (per credit hour) | 380 |
| 6-11 hours (per credit hour) | 580 |
| 17 th hour and above (per credit hour) | 380 |
| Tuition, auditing, per semester hour: | |
| 1/2 the normal per credit hour rate as described below | |
| Tuition, Nursing (Calvin/Hope Program) | |
| Per academic year | 18,158 |
| 1-5 hours (per credit hour) | 380 |
| 6-11 hours (per credit hour) | 640 |
| 17 th hour and above (per credit hour) | 380 |
| On-campus room and 21 meal plan (academic year) | 5,485 |
| Summer tuition, per semester hour 2002 rate | 360 |

Deposits

| | |
|-----------------------------------|-------|
| Enrollment deposit, if required | \$300 |
| Housing deposit | 75 |
| Physical education locker deposit | 10 |

Special Fees

| | |
|---|------|
| Application fee - On-Line | \$35 |
| Application fee - Paper | 50 |
| Off-campus program fee | 125 |
| Examination fee (course credit) | 45 |
| Examination fee (exemption) | 15 |
| Applied Music Instruction | |
| 2-3 credit hours per semester | 480 |
| 0-1 credit hours per semester | 240 |
| For concentrates, per semester | 340 |
| Late payment fee | |
| 1% of outstanding balance per payment period | |
| Credentials/recommendations, per set | 2 |
| Transcript fee | 5 |
| Vehicle Registration Fee | 20 |
| Visitor fee, per course | 55 |
| Residence Hall Social Fee | 15 |
| Computer Resnet Fee | 70 |
| Knightcare Insurance | 450 |
| Student Activity Fee | 35 |
| Passport Fee | 75 |
| (1 st year students only) | |
| Returned check fee | 20 |
| Career Services fee (1 st year Students) | 40 |

Payments for tuition, room and board are to be made as per the following payment schedule unless payment is rendered in full at the beginning of each semester.

| Due Date | Tuition | Room & Board | | |
|--------------------------------|-----------------|-------------------------|-----------------|-----------------|
| 1st Semester | | | | |
| | | 21 Meals | 15 Meals | 10 Meals |
| August 28, 2002 | \$2,625 | \$914 | \$889 | \$848 |
| October 16, 2002 | 2,625 | 914 | 889 | 848 |
| November 13, 2002 | 2,625 | 915 | 890 | 847 |
| Total for 1st Semester | \$7,875 | \$2,743 | \$2,668 | \$2,543 |
| 2nd Semester | | | | |
| January 8, 2003 | \$2,625 | \$914 | \$889 | \$847 |
| March 12, 2003 | 2,625 | 914 | 889 | 847 |
| April 16, 2003 | 2,625 | 914 | 889 | 848 |
| Total for 2nd Semester | \$7,875 | \$2,742 | \$2,667 | \$2,542 |
| Academic Year | \$15,750 | \$5,485 | \$5,335 | \$5,085 |

Note: There is no interim charge for regular on-campus courses if a student maintains twelve semester hours in either the first semester or the second semester. If a student maintains eleven semester hours in both the first and second semester, the regular semester hour interim tuition charge will be discounted by 25%. Otherwise, students will be charged the regular per semester hour charge for interim courses. Course fees and off-campus travel costs are in addition to any interim charge.

The balance for total tuition, room and board charges are reduced by all financial aid credits a student receives for the semester. Any balance due from the students will be divided into three payments. The three payments will be due as per the payment schedule due dates. Accounts not paid on time are subject to a late payment fee of 1% per payment period on the outstanding balance. Students whose accounts are not paid according to schedule will be prohibited from registering for future classes. Transcripts are not issued for students with past due accounts. The ability to charge miscellaneous expenses to a campus billing account will also be suspended.

An enrollment deposit of \$300.00 is required of all enrolling first-year, transfer, and readmitted students. This deposit serves as a confirmation of the student's plans to enroll and is applied toward the orientation fee and \$75 housing deposit (for students living on campus). The remainder is applied to the student's tuition charges. First-year students must pay this deposit by May 1. The due date for transfer students is June 1. The enrollment deposit is not refundable after the due date. Former students who have been readmitted to the college must pay their enrollment deposit by August 1.

Dually enrolled students are individuals who are still attending high school, but are concurrently enrolled in college courses. Dually enrolled students may take up to two college courses per semester at a reduced rate that is approximately one-third the normal semester hour amount. For 2002-03, the dually enrolled per-semester hour tuition rate is \$190.00. Dually enrolled students are permitted to take one interim course at the reduced rate. Dually enrolled students who are taking more than two college courses in a semester will be charged the regular semester hour rate for the additional courses. Tuition charges for dually enrolled students are due in full at the beginning of each semester unless alternative arrangements are made with the Financial Services Office.

Course Auditing

Students with 0 to 5 non-audit credits who choose to audit a class will be charged at \$190 per credit hour for the audited course.

Students with 6 to 11 non-audit credits who choose to audit a class will be charged at \$290 per credit hour for the audited course.

Students with 17+ non-audit credits who choose to audit a class will be charged at \$190 per credit hour for the audited course.

Check Cashing Policy

Students may cash personal and payroll checks upon presentation of a valid Calvin College ID card. Checks may not exceed \$200.00 and must be made payable to “CASH” or to the person cashing the check. Cashing of third party checks is not permitted.

Students who present a Canadian funds check for cash will be charged a \$5.00 service fee per check.

A \$20 charge will be assessed on all checks returned by the bank. In addition, check cashing privileges will be subject to suspension if three checks are returned during any nine-month period. Check cashing privileges will also be suspended if a student has an unsatisfactory financial account balance with Calvin College.

Institutional Withdrawals

Students withdrawing from the college are required to inform the Office of the Registrar of their decision to withdraw so that written notification can be circulated to other college offices. All tuition charges will be dropped for any student withdrawing from the college during the first 10 calendar days of the semester.

Tuition charges for students withdrawing from the college after the 10 calendar days will be refunded as follows:

| | |
|-----------------------|------|
| Calendar days 1–10 = | 100% |
| Calendar days 11–17 = | 80% |
| Calendar days 18–24 = | 80% |
| Calendar days 25–31 = | 60% |
| Calendar days 32–38 = | 40% |
| After 38 days = | 0% |

Financial Aid for such students is reviewed, generally reduced, and refunded back to the appropriate financial aid programs. The following return of financial aid policies apply to students who withdraw from Calvin during a semester.

Federal Title IV Aid – If a student withdraws before completing 60% of the semester, the institution must determine the percentage of Title IV assistance the student has earned. The percentage is determined by dividing the total number of calendar days in the semester into the number of calendar days completed as of the withdrawal date. Any unearned aid must be returned to the Title IV program(s). Funds are returned in the following order: Direct Unsubsidized Loan, Direct Subsidized Loan, Perkins Loan, PLUS Loan, SEOG, Pell Grant, other Title IV programs.

State of Michigan Aid – The reduction in the state award is calculated on the percent of tuition and fees originally paid by the state award. This percent is applied to the revised tuition charged (based on the withdrawal date) and results in the amount of the original award the student can retain. The remaining amount is returned to the state.

Institutional Aid – For students withdrawing from the institution, the reduction in institutional aid is based on the percent of the semester not completed. The student retains the percent of institutional aid equal to the percent of the semester completed.

Students considering withdrawing who are concerned about the effect on their financial aid are encouraged to contact the Office of Scholarships and Financial Aid.

The Financial Services Office will issue a check to the student for any credit balance remaining on their account after all charges have been paid and refunds have been made. If a cash disbursement has been made to a student before discontinuing to pay for off-campus living expenses, the Office of Scholarships and Financial Aid will determine whether repayment of a portion of the cash disbursed is required. The student will be notified if there has been an overpayment that needs to be repaid. Upon collection, the overpayment will be returned to the appropriate financial aid programs in the same order as listed above.

Students withdrawing from one or more courses, but not discontinuing will have their tuition charges for those courses adjusted. Financial aid will be reviewed also and will likely be reduced.

Room and board charges will be prorated over the entire semester for students who leave on-campus housing during the semester.

All other charges, such as, but not limited to, laboratory fees, art material fees, application fees, and health insurance fees are non-refundable.

Scholarships and Financial Aid

Calvin 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 ministry shares, and (3) need-based scholarships and grants for students who are not eligible for state or federal grants or who need more scholarship and grant assistance than state and federal programs provide.

Information about application procedures for financial aid is included with admission information for prospective students and is made available to current students each year. Those who apply for need-based financial aid 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. Questions or requests for additional information should be directed to the Office of Scholarships and Financial Aid.

Enrollment Requirements for Financial Aid

Most scholarship and financial aid programs require attendance at least half time (6 credit hours per semester, for undergraduates and 4.5 for graduate students). There are three exceptions to this: 1) the Denominational Grant, which is not contingent on the number of hours for which a student is registered, 2) the Michigan Adult Part-Time Grant, which is available to students taking at least three but fewer than 12 credit hours per semester, and 3) the Federal Pell Grant which is available for those who meet the federal need criteria.

Minimum enrollment for academic scholarships awarded by the college is 6 credit hours per semester for undergraduates and 4.5 for graduate students, although many of the named scholarships assume full-time enrollment. Students who enroll at least half time but less than full time can be considered for financial aid but usually in reduced amounts.

Academic Progress Requirements for Financial Aid

Students who receive financial aid must meet minimum academic standards to continue to be eligible for financial aid. These standards are established to encourage students to complete courses for which aid is received and to progress toward degree completion. The standards are similar to those used for academic probation and dismissal. They apply to students who are currently attending Calvin or have attended Calvin previously and are applying for aid for the first time, as well as to those applying for renewal of aid.

Programs Affected – The programs to which these standards apply are: Michigan Competitive Scholarships and Tuition Grants; Michigan Adult Part-Time Grants; Calvin Scholarships, Grants, and Loans; Federal Pell Grants, Federal Supplemental Educational Opportunity Grants, Federal Perkins Loans, Federal Direct Loans, Federal Direct PLUS Loans, MI-Loans, Federal and State Work-Study Employment, and some sources of private fund-

ing. To receive institutional financial, a student must meet the minimum academic requirements described in the section “Academic Probation and Dismissal” (page 27).

Measurement of Progress – Academic progress is measured by 1) a minimum cumulative grade point average needed for continued enrollment, and 2) the number of credit hours earned at Calvin in relation to the number of credit hours attempted. The requirements based on the number of credit hours attempted are as follows:

| Number of Credit Hours Attempted | Percent Completion Required | Cumulative GPA Required |
|----------------------------------|-----------------------------|-------------------------|
| 16 or fewer | 66% | 1.00 |
| 17 – 31 | 66% | 1.30 |
| 32 – 49 | 68% | 1.45 |
| 50 – 67 | 70% | 1.60 |
| 68 – 85 | 72% | 1.75 |
| 86 – 104 | 74% | 1.90 |
| 105 – 123 | 77% | 2.00 |
| 124 or more | 80% | 2.00 |

Notes:

1. The number of credit hours attempted is the number of hours for which a student is registered at the beginning of the second week of classes, not the number for which a student is registered at the end of the semester.
2. In calculating the percent completed, Academic Service courses and transfer credits are not counted in the number of credits attempted or earned, nor are they counted in the cumulative grade point average.
3. Courses that are repeated are counted in the number of courses attempted but not in the number of credits earned.

In addition, financial aid is not available to undergraduate students who have attempted more than 155 credit hours, including transfer credits, or to graduate students who have attempted more than 40 credit hours. A student who is denied financial aid because his/her total attempted credit hours exceed these amounts may be considered for additional financial aid if (s)he changed majors or programs. The appeal procedures listed below should be followed to request reinstatement of financial aid eligibility.

Evaluating Progress – Academic progress is evaluated at the end of each academic year to determine eligibility for the following year. Students who have not earned the number of credit hours required or the minimum grade point average required at the end of second semester based on the number of credits attempted are not eligible for aid for subsequent semesters in the programs listed above. There are, however, some circumstances under which the requirements can be adjusted, or the student can receive aid on probation for a semester or a year if the requirements are not met. These are as follows:

1. The student is making up incompletes.
2. There were extenuating circumstances, such as illness or a death in the family that prevented the student from earning the number of credits required.
3. The student discontinued after the beginning of the second week of classes because of extenuating circumstances.

Appeals – Students who fail to make satisfactory progress and have extenuating circumstances that should be taken into consideration should discuss these with the Associate Director of Financial Aid. Those who are denied financial aid because of failure to make satisfactory progress may appeal the decision to the Committee on Scholarships and Financial Aid, whose decision is final.

Denominational Grants

Students whose families are members of the Christian Reformed Church and who contribute regularly to Calvin through denominational ministry shares receive a Denominational Grant. The amount of the grant is determined in part by the location of the student's home.

The home of an unmarried student under 24 years of age is considered to be that of his or her parents. 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. Students who are married or 24 or older receive the grant based on their permanent residence.

Out-of-state students who meet the residency requirements for the Michigan Competitive Scholarship or Tuition Grant are considered Michigan residents for purposes of the Denominational Grant. When the need of a student is met by the 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 2002–03

| | <i>Grant per semester hour, if paying by the semester hour</i> | <i>Grant per semester, if paying full tuition</i> |
|---|--|---|
| <i>For undergraduates enrolled at least half time</i> | | |
| Michigan students | \$30 | \$375 |
| Students from Illinois, Indiana, Ohio, Wisconsin, and Ontario, Canada | \$40 | \$500 |
| Students from other states, provinces, and countries | \$50 | \$625 |
| <i>For undergraduates enrolled less than half time</i> | | |
| Michigan students | \$20 | |
| Students from Illinois, Indiana, Ohio, Wisconsin, and Ontario, Canada | \$25 | |
| Students from other states, provinces, and countries | \$30 | |
| For Adult Learners enrolled less than half time | \$20 | |
| For Graduate Students | \$15 | |
| <i>Summer Rates</i> | | |
| For Undergraduate Students | \$20 | |
| For Graduate Students | \$15 | |

Academic Scholarships

Scholarships are awarded to incoming students to encourage good students who are likely to do superior work to enroll at Calvin and to upper-class students to encourage superior academic performance. Most scholarships are granted on the basis of the student's academic record and potential, but in some cases other factors such as program of study, financial need, and other designated criteria are taken into consideration. More than 500 scholarships are awarded annually to first-year students and more than 1000 to upper-class students. Individuals may be considered for a named scholarship or departmental scholarship in addition to one of the general college scholarships.

General College Scholarships

Incoming first-year students are considered automatically for the general college scholarships described below on the basis of the information received at the time of admission and are not required to file a separate scholarship application form except where noted. For maximum consideration, students must be admitted by February 1.

The Calvin National Merit Scholarship is a four-year scholarship and is renewable for three years, as long as the recipient continues to attend Calvin. The Presidential, Dean's, Faculty Honors, and Honors Scholarships are available for up to five years if the recipient has the cumulative grade point average required. The grade point averages required for renewal are: 3.50 for the Presidential Scholarship, 3.40 for the Dean's Scholarship, 3.30 for the Faculty Honors Scholarship, and 3.20 for the Honors Scholarship. Presidential Scholarship recipients with a grade point average between 3.40 and 3.49 will receive the Dean's Scholarship for the following year; both Presidential and Dean's Scholarship recipients with a grade point average between 3.30 and 3.39 will have their scholarships renewed as Faculty Honors Scholarships; and recipients of Presidential, Dean's, and Faculty Honors Scholarships with a grade point average between 3.20 and 3.29 will have their scholarships renewed as Honors Scholarships. The grade point average used to determine renewal is the average at the end of second semester for first-year students and the average at the end of the interim for other students.

Factors considered in awarding Presidential, Dean's, Faculty Honors, and Honors Scholarships include the student's high school grade point average, class rank, ACT or SAT scores, and involvement in, leadership of, and honors received for participation in activities outside the classroom. Typically, a grade point average of 3.5, an ACT composite score of 25, or combined SAT scores of 1150 are the minimum qualifications for any of these scholarships. Students selected are awarded the best scholarship for which they qualify.

Calvin National Merit Scholarships Calvin awards National Merit Scholarships of \$8,500 each to all National Merit Finalists who have a high school grade point average of 3.5 or better, have designated Calvin as their first-choice college, and are not selected to receive

another scholarship through the National Merit Corporation.

Presidential Scholarships Scholarships of \$5,500 each are awarded to the top 100 or more incoming first-year students who do not receive a Calvin National Merit Scholarship.

Dean's Scholarships More than 85 scholarships of \$3,500 each are awarded to incoming first-year students who demonstrate outstanding academic achievement and potential but have not been selected to receive a Presidential Scholarship.

Faculty Honors Scholarships Scholarships of \$2,500 each are awarded to approximately 150 first-year students with excellent academic records. These scholarships are awarded automatically to students who rank first in their high school class if they have a grade point average of 3.50 or higher with an ACT composite of 25 or higher, or combined SAT scores of 1150 or higher and to others based on the criteria described earlier.

Honors Scholarships Scholarships of \$1,500 each are awarded to approximately 175 or more of the incoming first-year students who are not selected to receive one of the above scholarships.

Academic Achievement Awards Academic Achievement Awards are awarded in multiples of \$500 to returning students who do not presently have one of the above scholarships and earn a cumulative grade point average of 3.40 or higher. They are also awarded to those who have an Honors, Faculty Honors, or Dean's Scholarship and earn a cumulative grade point average that is significantly higher than required for renewal of their scholarship. The grade point average used to determine renewal is the average at the end of second semester for first-year students and the average at the end of the interim for other students.

Awards of \$500 are granted to those who 1) do not have one of the above scholarships but have a cumulative grade point average between 3.40 and 3.54, 2) have an Honors Scholarship and a cumulative grade point average between 3.50 and 3.64, 3) have a Faculty Honors Scholarship and a cumulative grade point average between 3.65 and 3.79, or 4) have a Dean's Scholarship and a cumulative grade point average of 3.80 or higher.

Awards of \$1,000 are granted to those who 1) do not have one of the above scholarships but have a cumulative grade point average between 3.55 and 3.69, 2) have an Honors Scholarship and a cumulative grade point average between 3.65 and 3.79, or 3) have a Faculty Honors Scholarship and a cumulative grade point average of 3.80 or higher.

Awards of \$1,500 are granted to those who 1) do not have one of the above scholarships but have a cumulative grade point average between 3.70 and 3.79 or 2) have an Honors Scholarship and a cumulative grade point average of 3.80 or higher.

Awards of \$2,000 are granted to those who do not have one of the above scholarships but have a cumulative grade point average of 3.80 or higher.

Scholarships for Transfer Students Calvin awards scholarships of \$5,500, \$3,500, \$2,500, and \$1,500 to prospective transfer students based on their academic record and potential to be successful at Calvin. Selection is based on the student's academic record in both high school and college. Typically, a previous college grade point average of 3.50 or higher is required for consideration. The \$5,500 scholarship is renewed with a cumulative grade point average of 3.50 or higher; the \$3,500 scholarship requires a 3.40 for renewal; the \$2,500 scholarship requires a 3.30; and the \$1,500 scholarship is renewed with a 3.20 grade point average. The grade point average used to determine renewal is the average at the end of second semester for first-year students and the average at the end of the interim for other students.

Post-Baccalaureate Scholarship Awards of \$1,500 are available to students who have already received a bachelors degree but are continuing their undergraduate study. Current Calvin students with a general academic scholarship are eligible as well as transfer students with a cumulative transfer grade point average of 3.5 or above.

Calvin Mosaic Awards and Multicultural Awards In an effort to develop a community that celebrates cultural diversity and a student body that is more culturally diverse, Calvin has developed these two awards. Many recipients are ethnic minority students, but some are majority students from ethnically

diverse backgrounds. Recipients must be U.S. citizens, financial aid-eligible-non-citizens, or Canadian citizens.

Up to ten Mosaic Awards are awarded each year to students with excellent academic records and potential for college, whose ethnic, cultural, and/or socio-economic backgrounds will contribute to a more culturally diverse student body at Calvin. Awards are in the amount of \$5,500 per year, are awarded in addition to the Honors, Faculty Honors, Dean's, Presidential, and National Merit Scholarships for those who qualify, and are renewable for those who maintain a cumulative grade point average at Calvin of 2.50 or higher.

Multicultural Awards of \$1,500 each are awarded to all prospective first-year North American ethnic minority students who have a high school grade point average of 3.0 or higher, are granted regular admission to the college, and are not selected to receive a Mosaic Award. Those who have the grade point average required but are not granted regular admission are reviewed for the award individually. For transfer students who are ethnic minorities, a grade point average of 3.0 or better is required in their previous college work. Awards are renewed for up to four additional years for students who maintain a cumulative grade point average of 2.00 or higher at Calvin.

Named Scholarships Funded by Donors

A number of scholarships and grants have been established by donors to support the college's scholarship program and to provide recognition and financial support to students who meet the eligibility criteria described. Application procedures vary from one scholarship to another and are included in the description of each scholarship. For those scholarships that require a letter or separate application, the deadline for prospective first-year students is February 1 and for others is March 1. For all scholarships where financial need is considered, an application for financial aid is required as well.

Roger L. and Sandra L. Alderink Family Scholarship Mr. and Mrs. Roger and Sandra Alderink of Caledonia, Michigan have established this scholarship for graduates of Unity Christian High School in Hudsonville, Michigan, where the Alderinks' children and Mr.

Alderink attended. The Alderinks are grateful for the support, encouragement and direction received from the staffs at both Unity Christian and at Calvin, and have chosen this scholarship as a way of supporting those who have the desire and vision to excel in their Christ-centered education. Recipients must demonstrate a reformed faith commitment as evidenced by involvement in volunteer organizations and activities, other than athletics, in church or school. Three scholarships of \$2,500 were awarded for 2002-03. Recipients are selected by Unity Christian High School.

Stephen P. Beals Family Scholarship Dr. Stephen and Mrs. Martha Beals have established this scholarship in appreciation to those who helped Dr. Beals succeed at Calvin. While at Calvin the groundwork was laid for Dr. Beals to succeed spiritually, academically and financially. It is their desire to provide assistance to a promising young pre-med student so that the recipient may benefit in a manner similar to Dr. Beals. Candidates need to be entering the junior or senior year, have a grade point average of 3.0 or better, be pursuing a degree in medicine and show some evidence of financial need. For 2002-03 one scholarship of \$1,500 was awarded. To apply for this scholarship use the Upper-class Named Scholarship Application available from the Office of Scholarships and Financial Aid in January.

Clarence and Anne Beets Scholarship Dr. William C. (Clarence) and Mrs. Anne Beets have contributed a gift to Calvin, the income from which is used to provide two scholarships of \$2,300 each. Dr. and Mrs. Beets are interested in helping students who have been successful at Calvin and have the potential and motivation to continue to be successful but lack the financial resources to meet all of their expenses. To be considered for a scholarship, a student must be entering the junior or senior year, demonstrate financial need, be making normal progress toward a degree, and have a cumulative grade point average of 2.5 or higher. No separate application is required.

Belden Brick & Supply Architectural and Masonry Scholarship As a way of demonstrating their support for the mission of the college, Belden Brick & Supply of Grand Rapids, Michigan has provided the college with funds to establish this scholarship. The schol-

arship is awarded to a child or grandchild of a mason, architect, or homebuilder, with preference given to those entering the first year at Calvin. Additionally, candidates should be able to indicate that a parent or grandparent has or had a working relationship with Belden Brick & Supply Company. A grade point average of 3.0 or higher is required for first-year students. Financial need is not required but may be considered. One scholarship of \$1,500 was awarded for 2002-03. Letters of application detailing an established relationship with Belden Brick & Supply should be sent to the Office of Scholarships and Financial Aid by February 1.

Beré Memorial Scholarship The college has received a gift from Mrs. Jeanne L. Beré in memory of her late husband, Paul Beré, the income from which is used to award one scholarship of \$800 or more 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. Need is a secondary factor in the selection. To apply for this scholarship, use the Upper-class Named Scholarship Application available from the Office of Scholarships and Financial Aid in January.

James F. Beré Memorial Scholarship This scholarship has been established in memory of Mr. James F. Beré, an alumnus and longtime supporter of Calvin. It is established to carry out his deeply held belief that racial and ethnic minorities should have increased opportunities to pursue a Christian higher education. This is a renewable scholarship normally awarded during the senior year in high school and renewed for up to three years for those who meet the renewal criteria. Selection is based on the student's academic record, potential for college, cultural background, potential to contribute to the cultural diversity at Calvin, and financial need. A high school grade point average of 3.0 or higher is required for consideration, and a Calvin grade point average of 2.5 is required for renewal. Eight scholarships ranging from \$2,200 to \$2,700 were awarded for 2002-03. No separate application is required.

Berkowitz Scholarship for Students with Disabilities The late Mr. and Mrs. Hyman Berkowitz of Wyoming, Michigan established this scholarship in gratitude for all that God

had given them. It was their philosophy that helping others is not only a duty, but also a privilege. This scholarship is designed for students with a physical handicap or learning disability. A grade point average of 2.5 or higher is required for entering freshmen; a minimum of 2.0 or higher is required for transfer and returning students. Financial need is also considered. Two scholarships of \$2,750 each were awarded for 2002-03. Prospective students who wish to be considered for this scholarship should write a letter of application giving information about their qualifications for the scholarship to the Office of Scholarships and Financial Aid. Returning students are considered automatically; no separate application is required.

Board of Trustees Scholarships The Board of Trustees, in an effort to acknowledge and maintain the outstanding tradition of academic excellence at Calvin, has established The Board of Trustees Scholarship Fund. Each year, senior students who are not only top academic scholars, but who also exemplify the highest Christian character and moral integrity, will be identified as Board of Trustees Scholars. No separate application is required.

Henrietta Bontekoe Nursing Scholarship Mrs. Henrietta Bontekoe established these scholarships because of her commitment to those in the nursing profession. Throughout her later life Mrs. Bontekoe truly appreciated the nursing care she received and longed to see others receive similar care. It was her desire that these funds be used to assist deserving students in the nursing program. Candidates must be entering the junior or senior year and have been officially accepted into the Calvin Nursing Program.

Robert and Marjorie Boot Scholarship Mr. and Mrs. Robert and Marjorie Boot of Kalamazoo, Michigan have established this scholarship because of their desire to return part of their blessings for use by future generations. Recipients must be returning students with a cumulative grade point average of 3.0 or higher and must demonstrate a love of (1) God, our only hope in life and in death, (2) Family, with whom we learn to share this love, and (3) America, where we can worship Him and pursue our goals according to our ability and ambition. Two scholarships

of \$2,350 each were awarded for 2002-03. To apply for this scholarship, use the Upper-class Named Scholarship Application available from the Office of Scholarships and Financial Aid in January.

J. Russel Bouws/Russ' Restaurant Scholarship A scholarship fund has been established in honor of Mr. J. Russel Bouws, founder of Russ' Restaurants in Holland, Michigan by Mr. Howard De Haan, owner of the franchise for Russ' Restaurants in Kent County. Eight to ten scholarships of \$900 each are awarded to Calvin students who are employed by one of the Russ' Restaurants in Kent County. Prospective as well as current students are considered. Selection criteria include the student's academic record, character, motivation, financial need, and length of service with Russ'. Application forms are available in January at participating Russ' restaurants in Kent County.

Dr. and Mrs. Harvey J. Bratt Medical Scholarship Harvey and Fran Bratt, medical doctor and registered nurse, respectively, have established a scholarship for worthy young people who plan to pursue a medical career and are in need of financial help. Dr. and Mrs. Bratt are both alumni of Calvin and have established the scholarship out of gratitude to the college for what it has meant to them and to God for what He has done for them. Three scholarships ranging from \$1,700 - \$2,400 were awarded for 2002-03. Eligibility requirements for the scholarship include: unquestioned Christian commitment, intention to enter a medical career, a cumulative grade point average of 3.0 or higher, and evidence of financial need. Applicants must be entering the junior or senior year at Calvin. Other factors that may be taken into consideration are: interest in medical missions, interest in service to the poor and needy, and ethnic minority status. To apply for this scholarship, use the Upper-class Named Scholarship Application available from the Office of Scholarships and Financial Aid in January.

Ronald Buikema Memorial Scholarship The family of the late Ronald Buikema of South Holland, Illinois has established this scholarship in his memory. Mr. Buikema was a lawyer, an alumnus of Calvin, an active supporter of the college, and a member of the college's Board of Trustees at the time of his death in

1997. The scholarship is for students entering the senior year who are planning to attend law school or a graduate program in politics or government who have demonstrated leadership skills and involvement in community or extracurricular college activities. A grade point average of 3.0 or higher is required. Preference is given first to graduates of Illiana Christian High School in Lansing, Illinois and secondly to graduates of other Chicago area high schools who meet the above criteria. If there are no qualified candidates from these high schools, others are considered. One scholarship of \$2,500 was awarded for 2002-03. To apply for this scholarship, use the Upper-class Named Scholarship Application available from the Office of Scholarships and Financial Aid in January.

Butterball Farms, Inc. Scholarship Through an annual contribution from Mark Peters and Butterball Farms, Inc., one \$1,500 renewable scholarship is awarded each year to a first-year student with a minimum high school GPA of 3.50. Preference is given to children of current Butterball Farms, Inc. employees, students that have attended Potter's House Christian School, or residents of inner city Grand Rapids. No separate application is required.

Susan Lemmen Byker Honors Scholarship Each year two or more prospective students who are Honors Scholarship recipients are selected to receive the special Susan Lemmen Byker Honors Scholarship. This scholarship has been established by Mr. Gary and Mrs. Henrietta (Blankespoor) Byker to honor their daughter-in-law, Susan (Lemmen) Byker, for her many years of service as a teacher in Christian, public, and international schools, and for her support of their son, Gaylen Byker, current president of Calvin. Preference for these scholarships is given to students from Unity Christian High School in Hudsonville, Michigan who are planning to pursue a program in Education. If there are no Honors Scholarship recipients from Unity Christian High School planning to study Education, students from Unity in other areas of interest will be considered. If there are no qualified candidates from Unity, students from other Christian high schools planning to study Education will be considered. No separate application is required.

Thomas F. Caldron, Jr. Memorial Scholarship This scholarship was established for a prospective first-year student who expresses a strong desire for coursework in a pre-medical, pre-law, engineering, or accounting program. Preference is given to first generation college students with a grade point average of 3.3 or higher. One scholarship of \$2,500 was awarded in 2002-03. No separate application is required.

Calvin Academy for Lifelong Learning Scholarship The Calvin Academy for Lifelong Learning (CALL) is an organization affiliated with Calvin. An important purpose of CALL is "to create an abiding partnership between Calvin and senior citizens who wish to share knowledge, talents, and experience." With the establishment of this scholarship, CALL also wishes to promote educational opportunities for students beyond the conventional college age by offering financial assistance to those who wish to study at Calvin at the undergraduate level and are in need of financial assistance. Candidates should be at least 25 years of age pursuing any undergraduate degree, teaching certification, or graduate school requirements. One scholarship of \$1,600 was awarded in 2002-03. No separate application is required for prospective first-year students. Upper-class students should use the Upper-class Named Scholarship Application available from the Office of Scholarships and Financial Aid in January.

Calvin Minority Scholarship Gifts have been received from constituents and friends of the college to fund this scholarship program for North American ethnic minority students. To be eligible for an award, candidates must have a grade point average of 2.5 or higher and must demonstrate financial need. Candidates for renewal are given first consideration. Normally, six to eight scholarships of \$2,000 to \$2,500 each are awarded each year. No separate application is required.

Capital Region Community Foundation Scholarship This scholarship is provided by the Capital Region Community Foundation of Lansing, Michigan. Scholarships are awarded to students who are residents of Ingham, Eaton, or Clinton counties in Michigan. Criteria for selecting recipients may include, but are not limited to, academic per-

formance, achievement or aptitude test performance, recommendations from instructors, financial need, and conclusions based on personal interviews. Candidates must have a grade point average of 2.5 or higher, be in good standing, and be “of proven superior ability, scholarship, and character.” No separate application is required.

Castle, DeWit, Timmer Scholarship This scholarship was established by Mr. John Ott in recognition of the dedicated careers of Ms. Ada Castle, Mr. Henry DeWit, and Mr. Jay Timmer. Candidates should be prospective first-year students with a grade point average of 2.5 or higher and interested in a career in business or marketing. One scholarship of \$1,500 was awarded in 2002-03. No separate application is required.

Celeryville Area Scholarship Supporters of the college from the Celeryville, Ohio area have established this scholarship to encourage students from their area to attend Calvin. Scholarships are awarded to students entering the first year at Calvin who exhibit motivation, Christian character, promise of growth, and some evidence that they have given of themselves to activities in their church and/or community. Candidates must have a high school grade point average of 2.5 or higher and be a child or grandchild of a family living in the Celeryville, Ohio area. Preference is given to students with greater need. Typically, two to four scholarships of \$500 each are awarded. Apply through the Celeryville Area Scholarship Committee.

James and Judith Chambery Scholarship The Chamberys have spent their entire economic life in human services, particularly in the care of chronically ill persons. They have felt that there is a general perception on the part of the public that business procedures and administration suffer from a general lack of an ethical basis, and that this perception is particularly acute in the viewing of “for profit health care” enterprises. As the field of long term health care administration has aged, its professionalism has grown; however, this has not increased its response to the ethical questions facing the industry. Facing these questions honestly and proposing reasonable alternatives to a society asking to be led on these issues is a challenge to be answered from a religious perspective and especially by those

with a world and life view. Candidates should be entering the junior or senior year and have a grade point average of 3.3 or higher. Candidates for this scholarship will submit an essay to the Office of Scholarships and Financial Aid on the topic of “Health Care Ethics.” This essay could include but is not limited to topics like: for-profit health care, long term health care, managed health care, home health care, care for the aged, or some other medical ethical issue. Information on the specifics of the essay requirements is available from the Office of Scholarships and Financial Aid in January.

Judith DeJong Clousing Disabilities Scholarship This scholarship has been established by the family of Ms. Judith Rae DeJong Clousing who developed blindness and epileptic-type seizures at the early age of seven. The scholarship is a memorial to her life testimony of the power and sufficiency of God’s grace in her life. Candidates must be permanently physically disabled and have a high school grade point average of 2.5 or higher if an entering first-year student, or a college grade point average of 2.0 or higher if a transfer or returning student. First consideration is given to students who are visually impaired. Two scholarships of \$1,500 each were awarded for 2002-03. Prospective students who wish to be considered for this scholarship should send a letter to the Office of Scholarships and Financial Aid describing their qualifications for the scholarship by February 1. No separate application is required for returning students.

Coca-Cola Company Calvin Scholarship This scholarship was established in recognition of the Coca-Cola Company. The Coca-Cola Company exists to benefit and refresh everyone it touches. A very important part of that benefit and refreshment is giving back to local communities, including education. The Coca-Cola Company has a tradition of providing financial support for education throughout the world. Candidates for this scholarship must have a grade point average of 3.0 or better and can be entering any class level. For 2002-03 one scholarship of \$2,000 was awarded. No separate application is required.

D & D Building Scholarship D & D Building, Inc. of Grand Rapids, Michigan has established this scholarship in grateful acknowledgement

of its employees. First consideration for scholarships is given to children of employees. If there are no children of employees who qualify, preference is given to prospective first-year students. Other factors that may be considered include the student's academic record (a cumulative grade point average of 2.0 or higher is required), participation in church, community, and extracurricular school activities, and financial need. One scholarship of \$1,500 was awarded for 2002-03. Prospective students with a parent employed by D & D Building, Inc. should send a letter of application to the Office of Scholarships and Financial Aid by February 1.

DaimlerChrysler Minority Scholarship The DaimlerChrysler Corporation provides Calvin funds to award scholarships to promising ethnic minority students who are residents of Michigan and plan to pursue a career in business or education. Four scholarships of \$2,750 each are awarded on the basis of financial need to one student in each class. No separate application is required.

Otto J. De Bruyn Family Scholarship Mr. Otto and Mrs. Marilyn De Bruyn established this scholarship to acknowledge their strong support of Christian higher education. First preference for this scholarship will be given to descendants of Mr. De Bruyn who are currently attending Calvin and are making satisfactory academic progress. If no descendants are identified, preference will be given to students pursuing a Physical Education major or minor. Candidates need to be entering the junior or senior year and must have a grade point average of 3.3 or better. To apply for this scholarship, use the Upperclass Named Scholarship Application available from the Office of Scholarships and Financial Aid in January.

Alice De Graaf Memorial Scholarship Funds are provided annually by the Frances W. and Louise Humphries Family Foundation of Chula Vista, California to fund a scholarship for students from Southern California. Candidates must be prospective first-year women students with a high school grade point average of 3.0 or higher and must demonstrate financial need. First preference is given to women students graduating from one of the high schools in the Chula Vista area. If there are no qualified candidates from Chula Vista,

students from the San Diego area will be considered, and if there are no qualified candidates from the San Diego area, students graduating from other high schools in Southern California will be considered. Typically, one scholarship of \$1,000 is awarded each year. No separate application is required.

De Groot Family Scholarship Mr. Amos J. De Groot of Downey, California has established this scholarship to assist Calvin in its responsibility to provide educational opportunities to minority persons and in its efforts to become a Christian community that reflects and values cultural and racial diversity. Scholarships are available to North American ethnic minority students who are entering the junior or senior year at Calvin, have a cumulative grade point average of 2.5 or higher, and are pursuing or planning to pursue a program that will lead to a career of service to disadvantaged ethnic minority families or individuals. Three scholarships of \$1,400 each were awarded for 2002-03. To apply for this scholarship, use the Upper-class Named Scholarship Application available from the Office of Scholarships and Financial Aid in January.

Jennie and Gerrit De Haan Memorial Scholarship Dr. Gerben and Mrs. Janice De Jong established this scholarship in memory of Mrs. De Jong's parents, Jennie and Gerrit De Haan. Dr. and Mrs. De Jong love to travel and have found traveling to be an enriching and mind-expanding experience. In the course of their travels, they have met many wonderful people and have made some wonderful friendships. Mrs. De Jong experienced the sudden losses of her parents in December of 1994 and 1995 — her father in an automobile accident and her mother at her home while visiting as part of an extended Thanksgiving holiday. This scholarship fund provides a way of combining these two very significant experiences with a desire to provide an opportunity for some young people to participate in Calvin's international travel interim program who might not otherwise have that opportunity. The De Jongs hope that this will prove to be a very intellectually enriching and life-enhancing experience for the scholarship recipients. Students from any class level with a grade point average of 3.0 or higher planning on going off campus for Interim can apply for

this scholarship. Typically three scholarships of \$500 each are awarded. Applications are available from the Office of Scholarships and Financial Aid in September.

Gerald and Joyce De Nooyer Family Scholarship This scholarship has been established by Mr. and Mrs. Gerald and Joyce De Nooyer of Kalamazoo, Michigan out of thankfulness for all the blessings God has given them. It is given with the hope that it will help equip and strengthen young people for a purposeful Christian commitment to their generation. The scholarship is a one-year scholarship for students entering their first year at Calvin. Selection is based on evidence of Christian commitment and demonstrated leadership ability in high school, church, or community activities, other than athletics, and requires a high school grade point average of 3.3 or higher. Two scholarships of \$2,200 were awarded for 2002-03. No separate application is required.

Eugene and Joan Deur Scholarship This scholarship was established in memory of Eugene and Joan Deur. Mr. and Mrs. Deur truly appreciated the excellent education Calvin provided their children and grandchildren. This scholarship aims to provide financial assistance to upper-class students pursuing a career of service in a teaching, missionary, or ministry field. Candidates should be entering the sophomore or junior year, have a grade point average of 3.0 or higher, and be pursuing a career in either teaching, ministry, or mission work. One scholarship of \$1,800 was awarded in 2002-03. To apply for this scholarship, use the Upper-class Named Scholarship Application available from the Office of Scholarships and Financial Aid in January.

Frank and Esther De Vos Family Scholarship Mr. Frank and Mrs. Esther De Vos have established this scholarship as an expression of their support for Calvin. It is their desire to see Calvin uphold its commitment to Christian education from a Reformed perspective while at the same time continuing to maintain the highest academic standards. Candidates need to be entering the junior or senior year, have a grade point average of 3.0 or higher and be pursuing a degree in biology. No separate application is required.

Gerald DeVries, Eastside Christian School Scholarship This scholarship has been established to improve the opportunity for Eastside Christian School graduates to receive an education at Calvin. Candidates must be graduates of Eastside Christian School and may be entering any class level. However, preference will be given to prospective first-year students. One scholarship of \$2,000 was awarded in 2002-03. Students interested in applying for this scholarship should contact Eastside Christian School.

Phyllis Van Dam De Vries Scholarship An alumna of Calvin, Ms. De Vries of Caledonia, Michigan has provided the college with funds for a scholarship for students who are seriously seeking a career and are not clear as to which direction they should go. Candidates must be entering the sophomore, junior, or senior year at Calvin and must have a cumulative grade point average of 2.7 or higher. First consideration is given to those who are relatives of Ms. De Vries if this is noted on the application. If there are no relatives who apply, other candidates will be considered who have taken or are planning to take a course in Human Resource Management. Preference among these applicants will be given to those who pay at least a portion of their own tuition. Typically, one scholarship of 1,500 is awarded. To apply for this scholarship, use the Upper-class Named Scholarship Application available from the Office of Scholarships and Financial Aid in January.

De Vries-Visser Scholarship The family of Mr. and Mrs. Wiebe and Gertrude De Vries of Pella, Iowa has established this scholarship in recognition of the many years of service that they and their son and daughter-in-law, Harold and Leona De Vries, have given for the cause of Christian education. The scholarship is awarded to graduates of either Pella Christian High School or Pella High School who are planning to attend Calvin. Selection is based on Christian character, promise of growth, and evidence of participation and leadership in activities outside the classroom such as church, community, and extracurricular school activities, other than athletics. A cumulative high school grade point average of 3.0 or higher is required. The scholarship is renewable for three additional years with a cumulative grade point average of 2.5. Selec-

tion is made by Pella Christian High School. For 2002-03, one new scholarship was awarded in the amount of \$1,500.

Kathryn De Weerd Memorial Scholarship

This scholarship honors the memory of Ms. De Weerd, a life-long member of the Pillar Christian Reformed Church in Holland, Michigan and her deeply held belief that Chiropractic Medicine, Osteopathic Medicine, and Physical Therapy are important alternatives to traditional medicine. Scholarship candidates must have a cumulative grade point average of 3.0 or higher and must be entering the junior or senior year. First preference will be given to those planning a career in Chiropractic Medicine, second preference to candidates in Osteopathic Medicine, and third preference to those in Physical Therapy. Financial need may be considered but is not required. Two \$1,300 scholarships were awarded for 2002-03. To apply for this scholarship, use the Upper-class Named Scholarship Application available from the Office of Scholarships and Financial Aid in January.

Henry and Eunice DeWit Scholarship

In appreciation for what Calvin has meant to the family of Henry and Eunice DeWit, this scholarship has been established in their name by their family. The scholarship also honors Henry's years of service to Calvin both as a teacher and as an administrative leader, and Eunice's years of support to Calvin through her volunteer work. To reflect Henry and Eunice's wide variety of interests, this scholarship is open to students entering any major or field of study. One scholarship of \$2,300 was awarded for 2002-03. No separate application is required.

Bruce Dice Scholarship

Mr. Bruce Dice of Houston, Texas has established this scholarship out of a desire to help deserving Christian young people who are in need of financial help to attend Calvin who would likely not be able to attend Calvin otherwise. Scholarships will be awarded to students who have been raised in the Reformed or Presbyterian traditions and who demonstrate a strong Christian faith. Recipients must qualify for need-based aid from Calvin, have a high school grade point average of 3.0 or higher, and be planning to pursue a major or program other than Sociology. Scholarships can be renewed for three years for those who

maintain a cumulative grade point average at Calvin of 2.5 or higher. Generally, one \$5,500 scholarship is awarded each year. No separate application is required.

Diekema Family Scholarship

Anthony J. Diekema was president of Calvin for twenty years, from 1976 through 1995. He and his wife Jeane are both alumni of Calvin, and six of their seven children graduated from Calvin during the years of his presidency. They have established this scholarship in grateful acknowledgment of the academically excellent Christian education they all received. Scholarships are awarded to prospective first-year students with exceptional financial need and renewed for those who maintain a cumulative grade point average at Calvin of 2.0 or higher. A high school grade point average of 3.0 or higher is required to be considered for the scholarship. Because of the Diekema family's interest in diversity, preference will be given to ethnic minority students. Two scholarships ranging from \$2,500 - \$2,700 were awarded for 2002-03. No separate application is required.

Dr. Paul and Mrs. Doris Dirkse Health Care Scholarship

The children of Thedford and Ruth Dirkse have established this scholarship to honor their parents' long association with Calvin. Dr. Dirkse taught Chemistry to students in the nursing program and Ruth Imanse Dirkse was Manager of the Bookstore and active in the Alumni Association. Candidates for this scholarship must be entering the junior or senior year, be pursuing a program in Nursing, and have a grade point average of 3.3 or higher. One scholarship of \$2,400 was awarded for 2002-03.

Mary Cannon Dively Scholarship

Ms. Mary Cannon Dively of Grand Rapids, Michigan has provided the college with funds for scholarships. Ms. Dively taught in Grand Rapids area schools for more than 40 years and believes strongly in the value of education. With this scholarship she wishes to help worthy, needy students with their college expenses. Candidates must be entering the sophomore, junior, or senior year at Calvin, must have a 3.0 grade point average or higher, and qualify on the basis of financial need. Two scholarships in the amount of \$1,000 each were awarded for 2002-03. No separate application is required.

Arnold and Mary Dood Medical Services Scholarship The children of Arnold and Mary Dood have established this scholarship as a tribute to the Christian love and service exemplified by their parents throughout their careers in the medical service field. Candidates should be entering their sophomore, junior, or senior years, be pursuing a nursing or pre-medical degree, have a grade point average of 3.3 or higher, show some evidence of financial need, and exhibit a spirit of service and giving to others. For 2002-03, two scholarships of \$1,700 each were awarded. To apply for this scholarship, use the Upper-class Named Scholarship Application available from the Office of Scholarships and Financial Aid in January.

Wayne and Ruth Dornbush Family Scholarship Mr. Wayne and Mrs. Ruth Dornbush have been life-long supporters of Christian education at all levels and have witnessed the tremendous difference it has made in their and their family's lives. In thankfulness for the Christ-centered education their family has received at Calvin, and for the many blessings God has provided them, they have established this scholarship for students who have achieved academic excellence. Each year one student receiving a Dean's Scholarship will be designated as the Wayne and Ruth Dornbush Family Scholar. No separate application is required.

Rev. Donald J. Drost Memorial Scholarship Funds have been provided in memory of Rev. Donald Drost to honor his life of Christian service as a pastor in the Christian Reformed Church. Scholarships are awarded to students graduating from Western Michigan Christian High School in Muskegon, Michigan who have a grade point average of 3.3 or higher and demonstrate financial need. Preference is given to those planning to pursue a program in the ministry in the Christian Reformed Church. Scholarships are renewable for three additional years for those who maintain a cumulative grade point average of 2.7 or higher at Calvin. One scholarship of \$4,800 was awarded for 2002-03. No separate application is required.

Dykstra Family Non-Traditional Student Scholarship Mary De Haan Dykstra and her husband Gregg of Byron Center, Michigan provide the college with funds each year to

award a \$1,000 scholarship to an older than average student. Candidates must be at least 30 years of age and be pursuing an undergraduate degree. First preference for new scholarships is given to students who demonstrate special needs in their life circumstances, and second preference to those enrolled less than half time who do not therefore qualify for other financial programs. Current recipients receive preference over new applicants as long as they are in good standing academically. To apply for this scholarship, use the Upper-class Named Scholarship Application available from the Office of Scholarships and Financial Aid in January.

Elkema Family Honors Scholarship This scholarship provides the funds for an Honors Scholarship to be awarded to a prospective first-year student. Preference is given first of all to students from Oak Harbor High School in Oak Harbor, Washington and second to students who are members of the Christian Reformed Church and attend one of the Christian schools in the state of Washington. If there are no qualified candidates from these high schools, candidates from other schools will be considered. If there is more than one qualified candidate in any of the above categories, final selection will be based on Christian character, promise of growth, and participation and leadership in church, community, and extracurricular school activities. No separate application is required.

Andy J. Egan Company Scholarship The Andy J. Egan Company, Inc. of Grand Rapids, Michigan is a Mechanical Contractor specializing in the construction and maintenance of commercial, industrial, institutional, and educational facilities. The company believes in young people and in the ideals of Calvin, and this scholarship is its way of supporting the mission of the college in a positive and tangible way. Preference is given to a first-year student that is a child or grandchild of an Egan Company employee. If no relatives of an employee are identified, preference will be given to prospective first-year students pursuing a Mechanical Engineering or Business Administration degree. In 2002-03, one \$1,500 scholarship was awarded. Prospective students with a relative employed by the Andy J. Egan Company should send a letter of appli-

cation to the Office of Scholarships and Financial Aid by February 1.

Elmhurst Christian Reformed Church Scholarship Members of Elmhurst Christian Reformed Church in Elmhurst, Illinois have established this scholarship in order to financially assist students who are members of Elmhurst CRC. Students from any class level are eligible to apply. Students interested in applying for this scholarship should contact Elmhurst Christian Reformed Church.

Emerson Minority Scholarship Calvin has received gifts from the late Mr. James Emerson and Mrs. Marjorie Emerson to be used for scholarships to North American ethnic minority students. Three scholarships of \$1,500 to \$1,700 each are awarded yearly on the basis of the student's academic record and financial need, with preference given to students from single-parent families. Returning students are considered, as well as incoming first-year students. A minimum grade point average of 2.5 is required for consideration. No separate application is required.

Enoch Grant With gratitude to God for their heritage, the Schuurings Family has established the Enoch Grant for first-year students from Hudsonville Unity Christian and Holland Christian High schools. When a student walks with God, that student reflects the love, joy, peace, forgiveness, kindness, self-control, humbleness, and generosity of God. Based on these qualities, the faculty of each school will nominate one graduating senior for a \$1,000 tuition grant to attend Calvin. Because God has forgiven us and gives us second chances, the Schuurings recognize that students may not have achieved high academic excellence in high school but have demonstrated that they have the ability and desire to excel at Calvin. Therefore, this grant is available to any graduate that reflects the aforementioned traits and meets the entrance requirements of Calvin. No separate application is required.

John G. and Anne Feringa Scholarship Mr. John and Mrs. Anne Feringa of Rockford, Michigan have provided Calvin with funds for this scholarship out of a desire to help worthy, needy students with their college expenses. New scholarship candidates must be entering their first year at Calvin, have a cumulative high school grade point average of

3.0 or higher, and demonstrate financial need. Preference is given to those not receiving another Calvin-awarded scholarship who have been actively involved in church, community, and extracurricular school activities. Scholarships are renewed for a second year for those who earn a grade point average of 2.5 or higher for their first year at Calvin. One scholarship of \$1,900 was awarded for 2002-03. No separate application is required.

August Frankena Memorial Dean's Scholarship Mrs. Theresa Frankena of Jamestown, North Carolina has established this scholarship in memory of her husband, Mr. August Frankena. Both Mr. Frankena and Mrs. Frankena graduated from Calvin, as did their son Bart. The Frankenases are long-time supporters of Christian education, and now Mrs. Frankena wishes to provide others with the same opportunity she and her husband had to attend Calvin. Each year, one engineering student receiving a Dean's Scholarship will be designated as an August Frankena Memorial Scholar. No separate application is required.

Covenant Scholarship of Goshen Indiana The Hoogenboom Family of Goshen, Indiana established this scholarship as an expression of their gratitude to God for the blessings he has given their family. They believe that the distinctly Christian world and life view taught and nurtured at Calvin is very important to a student's growth and maturation process. Preference for this scholarship is given to first-year students from Goshen Christian Reformed Church, South Bend Christian Reformed Church or Fort Wayne Christian Reformed Church. If no candidates meet these requirements then any student from Elkhart County, Indiana is considered. This scholarship is renewable provided the recipient maintains a cumulative grade point average of 3.0 or better while at Calvin. No separate application is required.

Grand Rapids Foundation Scholarship As a result of a bequest by the late Stephen D. Lankester to the Grand Rapids Foundation, nine or ten scholarships of \$500 to \$750 each are available each year to prospective and returning students from Kent County. The primary purpose of this program is to provide assistance to students with good academic records (3.0 grade point average or better) who have financial need. Recipients of this

scholarship who wish to be considered for renewal must re-apply each year. Apply through the Office of Scholarships and Financial Aid.

Jerry and Lynne Granger Family Scholarship

This scholarship is awarded to a senior at Lansing Christian High School in Lansing, Michigan who plans to attend Calvin the following year. Candidates must have a high school grade point average of 2.7 or higher and must exhibit Christian character and promise of growth. This scholarship is renewable for the sophomore year for students with a cumulative grade point average of 2.5 or higher. One new scholarship of \$2,400 was awarded for 2002-03. Selection is made by the high school.

Carl and Sandra Gronsman Family Scholarship

Mr. Carl and Mrs. Sandra Gronsman of Kalamazoo, Michigan have established this scholarship out of gratitude to God for the influence Calvin has had on their lives and on the lives of their children. As a tangible expression of that gratitude, they want to assist in making a Calvin education available to others. Recipients of this scholarship must be entering the junior or senior year, have a cumulative grade point average of 2.75 or higher, and be majoring in Business, Education, Medicine, or Social Work. Financial need is considered also. One scholarship of \$1,500 was awarded for 2002-03. To apply for this scholarship, use the Upper-class Named Scholarship Application available from the Office of Scholarships and Financial Aid in January.

William and Winifred Haeck Medical Scholarship

Funds for this scholarship have been provided by Dr. William and Mrs. Winifred Haeck out of gratitude for the assistance Dr. Haeck received from faculty members at Calvin in obtaining tuition scholarships for him to the University of Chicago and Rush Medical College. Scholarships are awarded to students entering the junior or senior year at Calvin who are pursuing a pre-medical program. A cumulative grade point average of 3.3 or higher is required. Two scholarships of \$1,450 each were awarded for 2002-03. To apply for this scholarship, use the Upper-class Named Scholarship Application available from the Office of Scholarships and Financial Aid in January.

Hamstra Foundation Scholarship The trustees of the Bernard and Dorothy Hamstra Charitable Foundation provide this scholarship in recognition of the Hamstras' dedicated support of Christian education. Scholarships are awarded to students from northern and central New Jersey, with priority given to those from Eastern Christian High School in North Haledon, New Jersey. Recipients are selected as prospective first-year students and scholarships are renewed for the sophomore, junior, and senior years for those who are in good standing and are making satisfactory academic progress. Candidates must demonstrate financial need and must have a high school grade point average of 3.0 or higher. Other factors that may be considered include Christian character, a strong work ethic or motivation, academic achievement, and leadership ability. Two new scholarships were awarded for 2002-03 in the amount of \$3,500 each. No separate application is required.

George G. Harper Scholarship

Mr. and Mrs. Don and Carol Holtrop of Montague, Michigan have established this scholarship in honor of George G. Harper, who gave many years of service to Calvin, principally as professor of English, but also as a counselor of students, mentor to young faculty members, repository of insightful memories and stories, and valuable volunteer. The scholarship is designed for an African American minority student in the junior or senior year, with preference given to those pursuing a major or minor in English. Two scholarships of \$1,600 each were awarded for 2002-03. To apply for this scholarship, use the Upper-class Named Scholarship Application available from the Office of Scholarships and Financial Aid in January.

James and Catherine Haveman Family Scholarship

In appreciation for what Calvin has done in the past and the impact that Calvin will continue to have in the future, the James and Catherine Haveman family has established this scholarship fund to assist students who have financial need to obtain a Christian college education. New scholarships are awarded to prospective first-year students and are renewed for the sophomore year for those who qualify. Recipients must demonstrate financial need and have a high school grade point average of 2.5 or higher. Preference is given to students planning to pursue a pro-

gram in pre-architecture, primary education, social work, or engineering. Scholarships are renewed for those making satisfactory academic progress. Six scholarships were awarded for 2002-03 in the amount of \$1,500 each. No separate application is required.

Rev. Bernard Haven Memorial Scholarship This scholarship is established in memory of Reverend Bernard Haven, a graduate of Calvin and Calvin Seminary. Rev. Haven joyfully served the Lord on the Zuni mission field. Relatives of Rev. Haven desire to assist needy students with a GPA of 3.00 or higher whose parents are serving God on the mission field. Consideration is given to prospective first-year students pursuing a degree in philosophy, English, history, education, or pre-seminary. Two scholarships of \$1,500 were awarded in 2002-03. No separate application is required.

Hearing Impaired Scholarship This scholarship is funded by numerous members of the Pauw, Plantinga, and Van Harn families and their friends out of their desire to help hearing impaired students obtain a Calvin education. Candidates must give evidence of suffering from deafness or a hearing impairment. First consideration will be given to renewals. Two scholarships of \$2,000 each were awarded for 2002-03. Prospective students who wish to apply for this scholarship should send a letter to the Office of Scholarships and Financial Aid describing their qualifications for the scholarship by February 1. No separate application is required for returning students.

Hearst Foundation Scholarship Funds for this scholarship are provided by the Hearst Foundation of New York, which was established by publisher and philanthropist William Randolph Hearst. The scholarship is a reflection of his priority to “programs to aid poverty-level and minority groups.” The scholarship is a renewable scholarship awarded during the senior year in high school and renewed for up to three years for those who meet the renewal criteria. Selection is based on the student’s academic record, potential for college, cultural background, potential to contribute to cultural diversity at Calvin, and financial need. Preference is given to students who have participated in Calvin’s Entrada Program. A high school grade point average of 3.0 is required for consideration,

and a Calvin grade point average of 3.0 is required for renewal. Two scholarships of \$3,000 each were awarded for 2002-03. No separate application is required.

Dewey and Marilyn Heetderks Family Medical Scholarship Dr. Dewey and Mrs. Marilyn Heetderks of Grand Rapids, Michigan have provided the college with funds for a scholarship for a student planning a career in medicine. Candidates must be entering the junior or senior year, be pursuing a pre-medical program, have a cumulative grade point average of 3.3 or higher, and give some evidence of financial need. Other factors that may be considered include the student’s Christian commitment and interest in medical missions. One \$1,500 scholarship was awarded for 2002-03. To apply for this scholarship, use the Upper-class Named Scholarship Application available from the Office of Scholarships and Financial Aid in January.

Bud and Clarice Hendrickson Scholarship Lawrence (Bud) and Clarice Hendrickson have a deep love for Calvin. Bud was a member of the class of 1940, and an athlete who played on championship men’s tennis and basketball teams. He made many exceptional friends during his college years. They have proven to be friends for a lifetime. Bud had to pay his own way through college, so he and Clarice know what it means to sacrifice for a Christian education. After graduation, they married and he went on to become a successful realtor in the Grand Rapids area. The Hendrickson’s are grateful for Calvin and appreciate the quality education it provides. They also have a warm heart for students. They have established this scholarship while they are still living to benefit another generation of Calvin students, with a special interest in assisting students with financial need. Candidates for this scholarship must have a grade point average of 2.5 or better and can be entering any class level. For 2002-03 one scholarship of \$1,500 was awarded. No separate application is required.

Heritage Class Scholarship Members of Calvin graduating classes of more than 50 years ago make annual donations to the Heritage Class Scholarship fund to honor current Calvin students with scholarships. Recipients are selected on the basis of academic record, potential, motivation, Christian character, and

financial need. A Calvin grade point average of 3.0 or higher is required. Five scholarships of \$1,850 each were awarded for 2002-03. No separate application is required.

Roger W. Heyns Presidential Scholarship Each year five or more students receiving Presidential Scholarships are designated as Roger W. Heyns Presidential Scholars. These scholarships are in honor of Dr. Roger W. Heyns, a 1940 graduate of Calvin, who had a long and distinguished career in education. His appointments included Professor of Psychology and Vice President of Academic Affairs at the University of Michigan, Chancellor of the University of California at Berkeley, and President of the American Council on Education. Funds for the scholarships are provided by the William and Flora Hewlett Foundation where Dr. Heyns served as president from 1977 through 1992. No separate application is required.

Dr. Roger A. and Bradley J. Hoekstra Memorial Scholarship A gift designated to provide student scholarships has been received from Mrs. Janice Veenstra in memory of her late husband Roger and son Bradley. Three scholarships of \$1,600 each are awarded to upper-class students who plan to pursue the study of medicine. Selection is based primarily on the student's academic record and potential, although financial need is also taken into consideration. To apply for this scholarship, use the Upper-class Named Scholarship Application available from the Office of Scholarships and Financial Aid in January.

Dewey and Kay Hoitenga Honors Scholarship Each year one student who is receiving an Honors Scholarship will be designated as the Dewey and Kay Hoitenga Honors Scholar. As alumni of Calvin, Dewey and Kay (Bos) Hoitenga are thankful for the Christ-centered education they received. Both of their fathers, as well as all four of their children, are also graduates of Calvin. This scholarship was established in appreciation for what Calvin has meant to their entire family. No separate application is required.

Dr. and Mrs. Lee S. Huizenga Memorial Scholarship This scholarship was established by the children of Dr. and Mrs. Lee S. Huizenga to remember their parents' lifelong commitment to "preach the gospel - heal the sick" in mis-

sions. Dr. Huizenga served in China from 1920 to 1945 and was recognized internationally for his research and work in leprosy and tuberculosis. Candidates should be pursuing either a pre-medical or pre-seminary program and should have a grade point average of 3.2 or higher. Two scholarships of \$1,250 each were awarded in 2002-03. To apply for this scholarship, use the Upper-class Named Scholarship Application available from the Office of Scholarships and Financial Aid in January.

Marti and Wayne Huizenga Family Presidential Scholarship In recognition of the gifts received from Marti and Wayne Huizenga to support Calvin's scholarship program, one or more students receiving the Presidential Scholarship are designated each year as Marti and Wayne Huizenga Presidential Scholars. Because of the Huizenga family's interest in philanthropic and charitable efforts throughout south Florida, preference will be given to Presidential Scholarship recipients from that area. No separate application is required.

Huntington National Bank Scholarship Huntington National Bank has provided Calvin with a gift, the income from which is used to fund scholarships. Recipients must have a grade point average of 3.0 or higher and must demonstrate financial need. Preference is given to students from western or central Michigan who are not receiving one of the general scholarships awarded by the college. Three scholarships of \$1,100 each were awarded for 2002-03. No separate application is required.

Jacobsen Family Dean's Scholarship Each year an education student who is receiving a Dean's Scholarship will be designated as the Jacobsen Family Dean's Scholar. This scholarship was set up to allow other students to receive the same type of education that was received by Roger Jacobsen, who had a wonderful experience at Calvin. The family is pleased with the excellent Christian liberal arts education he received. No separate application is required.

Ken and Joyce Jipping Family Scholarship Mr. and Mrs. Ken and Joyce Jipping of Jenison, Michigan have established this scholarship for students graduating from Unity Christian High School in Hudsonville, Michigan to encourage these students to at-

tend Calvin. Recipients are selected on the basis of Christian character, promise of growth, and evidence that they have given of themselves to activities, other than athletics, in their church and/or community. A minimum grade point average of 2.7 is required. Scholarships are renewable for the second, third, and fourth years for students who are in good standing and continue to exhibit Christian character in their activity at Calvin. One new scholarship of \$1,500 was awarded for 2002-03. Recipients are selected by the high school.

Wilhemina Kalsbeek Memorial Scholarship The family and friends of Wilhemina Kalsbeek have established a fund in memory of her and her missionary work in China from 1922 until 1949. The purpose of the scholarship is to assist with a Christian college education for students from mainland China who in turn can bring the Christian faith to the Chinese people. To be eligible for the scholarship, a student should be from mainland China, committed to return to China, proficient in speaking and writing the English language, and qualified to do college-level work. Other criteria considered in the selection include the student's academic potential, potential for Christian service in China, and financial need. Typically, three or more scholarships in the amount of \$2,000 or more each will be awarded each year. No separate application is required.

Rick and Jaltina Kehr Family Scholarship Mr. Rick and Mrs. Jaltina Kehr are strong supporters of Christian Education. Their desire is to fund a scholarship that will assist qualified students attend Calvin. Recipients of this scholarship will have attended Calvin Christian High School in Grandville, Michigan or have attended Sussex Christian School in Sussex, New Jersey. Candidates must be entering the first-year at Calvin and have a cumulative grade point average of 2.8 or better. No separate application is required.

William R. Kenan, Jr. Presidential Scholarship Each year four students receiving Presidential Scholarships are designated as William R. Kenan, Jr. Presidential Scholars. The scholarships are in honor of Mr. William Rand Kenan who established the William R. Kenan, Jr. Charitable Trust in 1966 and who believed that 'a good education is the most cherished gift an individual can receive.' The trust has

chosen to emphasize gifts to private educational institutions, preferring to give a small number of substantial grants that can make a real difference to the institution. No separate application is required.

Dr. Harry Kok Memorial Scholarship Three scholarships of \$2,000 each are presented to juniors each year in memory of Dr. Harry Kok for use in the senior year at Calvin. The award is given primarily for achievement in scholarship, although other factors such as financial need will be taken into account. No separate application is required.

Loranna Konrad Memorial Scholarship This scholarship has been established by Dr. Walter Konrad of Grosse Point Farms, Michigan in memory of his late wife Loranna to benefit students attending Calvin who do not come from Dutch or Reformed ethnic or religious backgrounds. The scholarship is a one-year award for students entering their first year at Calvin. In addition to considering ethnic and religious background, a high school grade point average of 3.0 or higher is required. One scholarship was awarded for 2002-03 in the amount of \$1,800. No separate application is required.

John C. and Barbara M. Kool Scholarship This scholarship was established to recognize Mr. John C. and Mrs. Barbara M. Kool. The Kool's immigrated to Grand Rapids from the Netherlands in 1953 and dedicated themselves to the Christian education of their four children. They gave their all to provide an education that they themselves were never privileged to enjoy. Their faithfulness and love is archetypal of the spirit in which Calvin was founded. Candidates for this scholarship must have a grade point average of 3.0 or better and can be entering any class level. For 2002-03 one scholarship of \$2,000 was awarded. No separate application is required.

Marlene and Bret Kort Canadian Scholarship In gratitude for the outstanding Christian education they received at Calvin, Dr. Bret and Mrs. Marlene Kort of Colorado Springs, Colorado have provided funds to encourage students from Canada planning to attend Calvin. One scholarship of \$1,500 is awarded each year to a student from Canada entering the first year at Calvin. The award is given to a well-rounded student who has participated in music, theater, and/or other service or extra-

curricular activities, not including athletics. The student' academic record, potential, and financial need are considered as well. No separate application is required.

Henry J. and Myrtle R. Kreulen Family Scholarship

Dr. Henry and Mrs. Myrtle Kreulen of Grand Rapids, Michigan have established this scholarship out of gratitude for the Christian education they and several of their children and grandchildren have received at Calvin. The scholarship is to be used to help students who desire and are qualified for a Calvin education but who may not be able to attend because of cost. New scholarships are awarded to prospective first-year students who demonstrate financial need and have a high school grade point average of 3.2 or higher. Preference is given to those with the greatest need who are not receiving other scholarships awarded by the college. Scholarships are renewed for a second year for those who maintain a cumulative grade point average at Calvin of 3.0 or higher. Two scholarships of \$2,100 each were awarded for 2002-03. No separate application is required.

Leonard M. Krull Scholarship As a result of a bequest to Calvin by the late Leonard M. Krull of Westborough, Massachusetts, three scholarships are available each year to prospective first-year students from the Whitinsville, Massachusetts area. The scholarships range from \$350 to \$1,250, with selection based on the student's academic record, ACT or SAT scores, and, in some cases, on financial need. The \$1,250 scholarships are renewable for up to four years. Selection is made by the Committee on Scholarships and Financial Aid of the college in consultation with a representative committee from the Whitinsville area. No separate application is required.

Florence G. Kuipers Scholarship Dr. Florence Kuipers is an alumna of Calvin who, through her work with the government and with Wycliffe Bible Translators, has developed a sensitivity to the educational needs of displaced and minority people in the world. She has established this scholarship program to assist minority students in obtaining a Christian college education at Calvin. New scholarships are awarded to North American ethnic minority students who demonstrate financial need. A high school grade point average of 3.0 is required for prospective first-year stu-

dents, and a previous college grade point average of 2.5 is required for prospective transfer students. Scholarships are renewed for those who maintain a cumulative grade point average at Calvin of 2.5 or higher. Two scholarships of \$1,500 each were awarded for 2002-03. No separate application is required.

Kunnen Family International Student Scholarship

Mr. Ron and Mrs. Anne Kunnen have established this scholarship in gratitude for God's blessings to them. The Kunnens wish to share these blessings with students who exemplify a Christian commitment and who will pursue academic excellence at Calvin, where excellence is the standard and not a goal. Each year one top international student will receive this \$5,500 scholarship. Preference is given to students pursuing a science or medicine degree, and to those who come from a developing nation with the intention of returning to that country after completion of his/her education. No separate application is required.

Kunnen Family Mosaic Award

Mr. Ron and Mrs. Anne Kunnen have established this scholarship in gratitude for God's blessings to them. The Kunnens wish to share these blessings with students who exemplify a Christian commitment and who will pursue academic excellence at Calvin, where excellence is the standard and not a goal. Each year one student receiving a Mosaic Award will be designated as a Kunnen Family Mosaic recipient. Preference is given to students that have grown up in inner city Grand Rapids, Michigan. No separate application is required.

Kunnen Family Presidential Scholarship

Mr. Ron and Mrs. Anne Kunnen have established this scholarship in gratitude for God's blessings to them. The Kunnens wish to share these blessings with students who exemplify a Christian commitment and who will pursue academic excellence at Calvin, where excellence is the standard and not a goal. Each year one student receiving a Presidential Scholarship is designated as a Kunnen Family Presidential Scholar. Preference is given to graduates of South Christian High School in Grand Rapids, Michigan. No separate application is required.

Milton and Carol Kuyers Family Mosaic Award

Each year ten or more students receiving Mosaic Awards are designated as Milton

and Carol Kuyers Family Mosaic Scholars. The awards are funded by a gift from the Kuyers family and are given in recognition of their long-standing commitment to Christian education and their interest in and work in ethnic minority communities. No separate application is required.

Wilbur A. Lettinga Family Scholarship Mr. Wilbur A. Lettinga has provided funds for this scholarship to encourage students from South Christian High School in Grand Rapids, Michigan to attend Calvin. Mr. Lettinga has been a strong supporter of both South Christian High School and Calvin. This scholarship has been established out of gratitude for the excellent Christian education his children have received at both schools. New scholarships are awarded to students graduating from South Christian High School and are renewed for the sophomore year for those who have a cumulative grade point average of 2.5 or higher at Calvin. Selection criteria include Christian character, promise of growth, and participation and leadership in activities outside the classroom such as church, community, and extracurricular school activities, not including athletics. A grade point average of 3.0 or better is required for consideration. Selection is made by the high school. In 2002-03, one new scholarship was awarded in the amount of \$1,500.

Macedonia Scholarship Mrs. Dorothy F. Loftus, an alumna of Calvin who for many years has worked in children and family services established this scholarship. Her concerns for education, particularly for black Americans, are under girded by her faith in God and the power of education to create justice and racial equity among people. This scholarship is intended to encourage black, Christian Americans to attend Calvin. Preference is given to students from New Jersey. No separate application is required.

Robert S. and Nancy M. MacPherson Scholarship This scholarship was established in recognition of Mr. Robert S. and Mrs. Nancy M. MacPherson. The MacPherson's share a proud Presbyterian heritage of faith and support for education both public and private in this country that dates back to 1750. Their love, wisdom and reformed faith have guided their children and grandchildren and enriched the church. Candidates for this scholarship

must have a grade point average of 3.0 or better and can be entering any class level. For 2002-03 one scholarship of \$2,000 was awarded. No separate application is required.

Michigan Colleges Foundation Each year the Michigan Colleges Foundation awards over 35 scholarships to students attending Calvin. Scholarships range in dollar amounts from \$800 to \$5,000. Typically, no separate application is required to apply for these scholarships.

McGregor/Miller Scholarship This scholarship was established by the designation of a McGregor Fund Trustee, Mr. Eugene A. Miller, for the purpose of providing assistance to financially needy students who have demonstrated academic ability. Candidates for this scholarship must be entering their first year, have demonstrated financial need, have a cumulative grade point average of 3.0 or higher, and be a resident of southeast Michigan. Two scholarships of \$2,500 each were awarded for 2002-03. No separate application is required.

Dr. and Mrs. Bernard Meeuwsen Medical Scholarship Dr. and Mrs. Bernard Meeuwsen of Grand Rapids, Michigan have provided Calvin with a gift out of gratitude for what God has done for their family and in appreciation of what Calvin has meant to their family. Dr. Meeuwsen is a graduate of Calvin and a number of the Meeuwsens' children have graduated from Calvin. The gift is used to fund a scholarship for a student pursuing a nursing or pre-medical program and entering the sophomore, junior, or senior year. A cumulative grade point average of 3.3 or higher is required, along with evidence of financial need. Two scholarships of \$1,800 each were awarded for 2002-03. To apply for this scholarship, use the Upper-class Named Scholarship Application available from the Office of Scholarships and Financial Aid in January.

Menninga Warnshuis Family Scholarship This scholarship was established in memory of Henry and Minnie Menninga and Shirley Menninga by Mr. and Mrs. Roger Warnshuis, Jr. New scholarships will be awarded to prospective first-year students and will be renewed for the sophomore, junior, and senior years. Candidates must demonstrate financial need, Christian character, personal integrity, and motivation. A cumulative high school

grade point average of 3.0 or higher is required and a grade point average of 2.5 is required for renewal candidates. One scholarship of \$3,600 was awarded for 2002-03. No separate application is required.

Mentoring Scholarship Calvin has received a challenge grant to fund a mentoring scholarship that will provide a personal relationship with a mentor as well as a monetary stipend. Ten new scholarships in the amount of \$1,200 each are awarded each year to U.S. and Canadian students who are entering the sophomore year and a similar number in the amount of \$1,800 each are awarded to new international students. Recipients must be interested in the personal and professional guidance a mentoring relationship can provide and willing to commit time on a regular basis to build this relationship. Scholarships can be renewed for succeeding years as long as the mentoring relationship continues to be satisfactory to both the mentor and the student. To apply for this scholarship, use the Upper-class Named Scholarship Application available from the Office of Scholarships and Financial Aid in January.

Mephibosheth Scholarship A scholarship has been established by an anonymous donor to provide scholarship assistance to students with physical disabilities. The donor, who had physical disabilities himself, established this fund out of gratitude for all that God did for him and named it the Mephibosheth Scholarship because, as he indicated, "he too dined at the King's table" (cf. II Samuel 9:13). First consideration for scholarships is given to prospective first-year and transfer students who have a physical impairment that is likely to continue indefinitely and who have the academic ability to be admitted as regular students. Preference is given to students who have financial need and to those who have an impairment that makes employment during the academic year less likely. Normally, up to six scholarships of \$2,750 each are awarded each year. Scholarships are renewable for those who maintain satisfactory academic progress as required for other financial aid programs. Prospective students who wish to be considered for this scholarship should send a letter of application to the Office of Scholarships and Financial Aid by February 1 describing their qualifications for the scholarship. No

separate scholarship application is required for returning students.

Sue Miller Scholarship Funds have been provided from the estate of Ms. Sue Miller to award scholarships to prospective first-year students at Calvin. Candidates must be residents of one of the states along the eastern seaboard, have a cumulative grade point average of 3.0 or higher, and demonstrate financial need. Preference is given to those who have been active in church, community, and extracurricular high school activities. One \$1,200 scholarship was awarded for 2002-03. No separate application is required.

William and Matilda Monsma Scholarship The children of Mr. and Mrs. Monsma have established this scholarship in memory of their parents to assist students who are pursuing opportunities and developing skills needed to assist, counsel, help, and teach others. Candidates must be entering the sophomore, junior, or senior year, have a grade point average of 3.0 or higher, be pursuing a major or program in English, Education, or Communication Arts and Sciences or be planning a career in a helping profession, and give some evidence of financial need. Preference is given to students from the south Chicago area. One scholarship of \$2,500 was awarded for 2002-03. To apply for this scholarship, use the Upper-class Named Scholarship Application available from the Office of Scholarships and Financial Aid in January.

Arnold and Cynthia Morren Family Scholarship Mr. Arnold and Mrs. Cynthia Morren of Grandville, Michigan have established this scholarship for students graduating from either Calvin Christian High School or Grandville High School in Grandville, Michigan or Tri-Unity Christian High School in Wyoming, Michigan. This is a renewable scholarship awarded on the basis of Christian character, promise of growth, and participation and leadership in activities other than athletics outside the classroom such as church, community, and extracurricular school activities. A grade point average of 3.0 or higher is required. Four new scholarships of \$2,000 each were awarded for 2002-03. Selection of Calvin Christian students is made by that high school. Selection of students from either Grandville High School or Tri-Unity Christian High School will be made by the

Office of Scholarships and Financial Aid. No separate application is required.

Jay and Kathleen Morren Family Scholarship Mr. Jay and Mrs. Kathleen Morren of Grand Rapids, Michigan have provided contributions to fund one or more scholarships for prospective students from South Christian High School in Grand Rapids, Michigan. Selection criteria for the scholarship include the student's academic record, promise of growth, Christian character, participation and leadership in church, community, and extracurricular school activities other than athletics, and financial need. A high school grade point average of 3.0 or higher is required for consideration. One new scholarship of \$2,200 was awarded for 2002-03. Selection is made by the high school.

Naomi Scholarship This scholarship was established for students from single parent families who have lost a parent through death or divorce or a student who herself or himself is a single parent because of the loss of a spouse. New scholarships are awarded to those entering Calvin as new students, either first-year or transfer students, who demonstrate financial need. A minimum high school grade point average of 3.3 or higher is required for those entering as transfers. A Calvin grade point average of 3.0 or higher is required for renewal. Preference is given to those not eligible for a Denominational Grant or for academic scholarships awarded by the college. One new scholarship of \$1,900 was awarded for 2002-03. No separate application is required.

NFP Enterprises' Computer Science/Sociology Scholarship NFP Enterprises has provided funds for a scholarship to computer science or sociology students. Candidates must be entering the junior or senior year, have a cumulative grade point average of 2.0 or better, and demonstrate strong Christian commitment. Candidates must be majoring in Computer Science with a Sociology minor or in Sociology with a Computer Science minor. Typically, one \$2,000 scholarship is awarded. To apply for this scholarship, use the Upper-class Named Scholarship Application available from the Office of Scholarships and Financial Aid in January.

Amos Nordman Foundation Scholarship Funds have been received from the Amos

Nordman Foundation Charitable Trust to be used for scholarships to students at Calvin. Mr. Nordman was a resident of Marne, Michigan and established a foundation that makes contributions to several colleges in Michigan for student aid. The scholarships are awarded to students who have a cumulative grade point average of 3.0 or better and are from families with limited income. No separate application is required.

Peter B. Northouse Family Scholarship The children of Mr. and Mrs. Peter B. and Jeannette H. Northouse have established this scholarship to honor their parents because of their dedication to Calvin and their interest in education. Scholarships are awarded to students who are entering the sophomore, junior, or senior year and have a cumulative grade point average of 2.70 or higher. Preference is given to students who are sincere, industrious, and highly motivated who are not receiving other scholarships awarded by the college. Two scholarships of \$2,800 each were awarded for 2002-03. No separate application is required.

David M. Ondersma Family Scholarship The David Ondersma family of Hudsonville, Michigan has established this scholarship to encourage graduates of Covenant Christian High School in Grandville, Michigan and from the Protestant Reformed denomination at large to attend Calvin. Scholarships are awarded on the basis of Christian character, promise of growth, and participation and leadership in activities other than athletics outside the classroom. A high school grade point average of 3.0 is required for consideration. Scholarships can be renewed for up to three years for recipients who maintain a cumulative grade point average of 3.0 or higher at Calvin. One new scholarship of \$2,500 was awarded by Covenant Christian High School for 2002-03. One scholarship of \$1,500 was awarded by the Office of Scholarships and Financial Aid. No separate application is required.

Mike and Bette Oostendorp Family Scholarship Mr. Mike and Mrs. Bette Oostendorp have established this scholarship in thankfulness to God for the influence Calvin has had not only on their own lives, but also on the lives of their daughters. Candidates need to be entering the junior or senior year, have a grade point average of 3.0 or better, show ac-

tive participation in volunteer activities, and be pursuing a degree in education or medicine. For 2002-03 one scholarship of \$1,500 was awarded. To apply for this scholarship use the Upper-class Named Scholarship Application available from the Office of Scholarships and Financial Aid in January.

Robert T. and Charlotte F. Otten Scholarship Robert Otten, a professor of Classics, and Charlotte Otten, a professor of English, who enjoyed teaching at Calvin for many years, have established a scholarship for a prospective first-year student. The scholarship is based on evidence of commitment to Christian liberal arts education and requires a high school grade point average of 3.0 or higher. Preference is given to students who plan to pursue a career in college teaching. One scholarship of \$1,800 was awarded for 2002-03. Students who wish to apply for this scholarship should send a letter to the Office of Scholarships and Financial Aid describing their qualifications for the scholarship by February 1.

Alan and Jan Pauw Family Scholarship Mr. and Mrs. Pauw have a special interest in liberal arts education and have established this scholarship for students majoring in history, philosophy, or a foreign language. Candidates must be entering the junior or senior year, have a cumulative grade point average of 3.0 or higher, and give some evidence of financial need. One scholarship of \$3,900 was awarded for 2002-03. To apply for this scholarship, use the Upper-class Named Scholarship Application available from the Office of Scholarships and Financial Aid in January.

Theodore J. Peters Scholarship A scholarship fund has been established by the late Mr. Theodore J. Peters, the income from which is used to provide scholarships to students from a number of West Michigan Christian high schools. Each year one scholarship is awarded to a prospective student at each of the following Christian high schools: Calvin Christian, Grand Rapids Christian, Holland Christian, Kalamazoo Christian, South Christian in Cutlerville, Unity Christian in Hudsonville, and West Michigan Christian in Muskegon. The amount of the scholarship is typically \$12,000, less the amount received from state and federal grant programs and from the college's Denominational Grant Program. Selection is made by the high school on the ba-

sis of the student's academic achievement, Christian character, leadership, and participation in extracurricular activities. No separate application is required.

Johannes and Charlotte Moss Plekker Memorial Faculty Honors Mr. John and Mrs. Judith Bielema of Grand Rapids, Michigan provide Calvin with annual gifts to be used to fund a scholarship in memory of Judy's parents, Dr. Johannes and Mrs. Charlotte Moss Plekker. These gifts provide funds for a Faculty Honors Scholarship to a student entering the junior or senior year at Calvin who is pursuing either the pre-medical program or a program in Chemical Engineering. No separate application is required.

Merle J. and Arnola J. Prins Family Presidential Scholarship Each year one or more students receiving a Presidential Scholarship will be designated as a Prins Family Scholar. Merle and Arnola Prins and their family have had a long-standing commitment to Christian education at all levels, and have witnessed its tremendous impact on their lives. In deep gratitude to God for his faithfulness across the generations, they have established this scholarship. They recognize that Calvin has maintained its integrity in an ever-changing world and they hope that this scholarship will help ensure that young people can continue to take advantage of the distinctively Christian learning opportunities offered at Calvin. No separate application is required.

Race Relations Multiracial Student Scholarship The Christian Reformed Church of North America (CRCNA) has authorized the Synodical Committee on Race Relations (SCORR) to provide scholarships of up to \$1,000 per year to North American ethnic minority students who are related to the Christian Reformed Church. Selection criteria include the student's academic record, financial need, and interest in serving God's Kingdom. Returning students are considered as well as incoming first-year students. Applications are available from the Office of Scholarships and Financial Aid after March 1.

Reunion Class Honors Scholarship Many graduating classes at Calvin have established endowments to provide scholarships to students. Income from these endowments is combined and is used to fund Honors Schol-

arships for needy students in the junior and senior classes. No separate application is required.

Milton C. Roskam Memorial Scholarship

The Milton C. Roskam Memorial Scholarship has been established by Dirk Roskam and his wife, Jennifer, in memory of Dirk's father Milton C. Roskam, who passed away during Dirk's freshman year at Calvin. Milton, who attended Calvin, was a firm believer of higher learning and the opportunity for all, regardless of financial well being, to attain a college degree. One of Milton's finest memories of Calvin was his involvement with the music department as a member of the Capella choir, an enjoyment of singing that was carried on from Grand Rapids Christian High School. Although never a music major, his love and passion for music carried on through his entire life singing in many choirs and playing the organ within his residence. Candidates for this scholarship may be pursuing any academic major, have grade point average of 2.0 or higher, be able to demonstrate a love and passion for music through either civic or academic activities, and must have financial need demonstrated by application for and acceptance of student loans for the year in which the scholarship is awarded. Preference will be given to a graduate of Grand Rapids Christian High School, the high school from which Milton graduated. For 2002-03 one scholarship of \$1,500 was awarded. To apply for this scholarship use the Upper-class Named Scholarship Application available from the Office of Scholarships and Financial Aid in January.

Bruce and Jeralyn Ryskamp Scholarship Mr. Bruce and Mrs. Jeralyn Ryskamp have established this scholarship out of their gratitude for the excellent education Calvin provided to them and to their children. First preference for this scholarship will be given to descendants of Bruce and Jeralyn Ryskamp. No class level or specific major will be required. Recipients need only to make satisfactory academic progress to have the scholarship renewed. Multiple descendants attending Calvin simultaneously will have the award split equally among those enrolled. It is the responsibility of the descendent(s) to notify the Office of Scholarships and Financial Aid by March 1st prior to his/her enrollment. If no descendants are identified other candidates

will be considered. Candidates for the scholarship must be entering the junior or senior year, have a cumulative grade point average of 2.5 or better and demonstrate qualities of strong character, leadership and concern for others. Preference will be given to students pursuing careers and developing skills needed to assist, counsel, help and/or teach children. For 2002-03 one scholarship of \$1,500 was awarded. To apply for this scholarship use the Upper-class Named Scholarship Application available from the Office of Scholarships and Financial Aid in January.

Paul and Thelma Schutt Family Medical Scholarship

Dr. Paul and Mrs. Thelma Schutt of Grand Rapids, Michigan have provided the college with funds for this scholarship for students pursuing a Pre-medical or Nursing program. Candidates must be entering the junior or senior year, have a cumulative grade point average at Calvin of 3.0 or higher, and give some evidence of financial need. Preference is given to those who demonstrate a strong Christian character and a caring personality. One scholarship of \$2,400 was awarded for 2002-03. To apply for this scholarship, use the Upper-class Named Scholarship Application available from the Office of Scholarships and Financial Aid in January.

Dena M. Sievert Scholarship

This scholarship has been established by gifts from Mr. Frederick and Mrs. Susan Sievert in honor of their daughter Dena and her involvement in Christian volunteer work while pursuing her Bachelor's Degree. The scholarship is a one-year scholarship for a prospective first-year minority student with a strong, demonstrated record of Christian or community volunteer work. Financial need will also be considered in deciding the recipient of this scholarship. One scholarship of \$1,500 was awarded in 2002-03. No separate application is required.

James E. Smith Presidential Scholarship

Each year four students receiving Presidential Scholarships are selected as James E. Smith Presidential Scholars. These scholarships are in memory of James E. Smith, who was a graduate of Calvin and an active alumnus. He was president of the Calvin Oratorio Society at the time he passed away unexpectedly in October 1991. The scholarships are funded by contributions from Gordon Food Service where Mr. Smith was a long-term employee

as Director of Operations. No separate application is required.

Spalink Memorial Missions Scholarship The Spalink family has established a scholarship fund in memory of John Spalink, Jr., which provides one scholarship of \$1,300 each year. Its purpose is to encourage superior students to enter missions. The scholarship is awarded to an upper-class student 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. To apply for this scholarship, use the Upper-class Named Scholarship Application available from the Office of Scholarships and Financial Aid in January.

Steelcase Foundation Scholarship The Steelcase Foundation of Grand Rapids, Michigan offers scholarships totaling \$11,000 annually to applicants who are children of Steelcase employees. Typically scholarships of \$800 to \$1,000 each are awarded to first-year and upper-class students. The recipients are selected by the Committee on Scholarships and Financial Aid of the college. Applicants are judged on the basis of scholastic ability, character, and need. Prospective students who want to be considered for this scholarship must send a letter of application to the Office of Scholarships and Financial Aid at Calvin by February 1. Returning students should complete the Upper-class Named Scholarship Application available from the Office of Scholarships and Financial Aid in January.

Wilma Steketee-Bean Scholarship Mrs. Wilma Steketee-Bean remembered Calvin among the charitable beneficiaries of her estate and created this scholarship. Mrs. Steketee-Bean expressed her desire but lack of opportunity to attend college when she was young. Her purpose for this scholarship is to help financially needy young men and women to have the opportunity she lacked to benefit from a college education. Three scholarships of \$2,200 each were awarded in 2002-03. Candidates for renewal must have a cumulative grade point average of 2.5 or higher. No separate application is required.

Edward C. and Hazel L. Stephenson Foundation Scholarship Each year Calvin receives a gift from this foundation to be used for scholarships. For 2002-03, twelve scholarships were awarded in amount of \$2,000 each. No separate application is required.

Robert and Timothy Sullivan Scholarship Each year Calvin receives \$1,000 from the Sullivan Scholarship Fund Trust to be used for one scholarship to an incoming first-year student. The scholarship is awarded to a needy student from a high school in the greater Grand Rapids area. Selection is made on the basis of academic achievement, character, participation in extracurricular activities, and financial need. No separate application is required.

Summer Ministries Grant To encourage participation in summer Christian service activities, a grant of up to \$1,200 is available to students enrolled at Calvin the year after the summer experience. Awards are given to students who participate and are not paid in summer missions/ministry work under the sponsorship of a Christian church or agency. Applications are available from the college Chaplain's Office each spring.

Arvin and Pearl Tap Family Scholarship Mr. Arvin and Mrs. Pearl Tap have been lifetime supporters of Christian education at all levels. They have seen the blessings for themselves, their children and grandchildren. They have a strong desire to share these blessings with others in the community. Since they have been supporters of The Potter's House Christian School ministry, it is their desire to extend this Christian academic experience to students of The Potter's House. Recipients will be entering the first-year at Calvin and must have a high school grade point average of 2.5 or higher. New scholarship selections will be made by The Potter's House Christian School.

Wilma Zondervan Teggelaar Family Scholarship The family of Mrs. Wilma Zondervan Teggelaar of Grand Rapids, Michigan has established this scholarship in her honor to recognize her lifelong generous and dedicated support of Christian education. New scholarships are awarded to first-year students and are renewed for the sophomore year. Selection criteria include the student's academic record and financial need with a high school

grade point average of 3.0 or higher required for consideration. Preference is given to students who have been involved in service-related and other volunteer activities during their high school years. Scholarships are renewed for students who are in good standing and continue to qualify on the basis of need. Four scholarships of \$3,000 each were awarded for 2002-03. No separate application is required.

Tong Family Scholarship Dr. Joseph Tong, an alumnus of Calvin from El Monte, California, has established this scholarship to assist international students at Calvin. Candidates must profess the Christian faith, demonstrate academic proficiency, and give evidence of financial need. First consideration is given to renewal candidates who have a grade point average of 2.5 or higher. Preference for new scholarships is given to students from Asia, particularly Indonesia. Two scholarships of \$1,700 each were awarded for 2002-03. No separate application is required.

Robert F. and Ella Topp Family Scholarship Mr. and Mrs. Topp have established this scholarship out of gratitude for the excellent Christian education their three sons received at Calvin. Scholarships are awarded to prospective students graduating from Grand Rapids Christian High School who have a high school grade point average of 3.0 or higher and demonstrate financial need. Scholarships are renewed for one year for those who maintain a grade point average at Calvin of 2.7 or higher. Preference for new scholarships is given to students planning to pursue a program in business administration. One scholarship of \$2,500 was awarded for 2002-03. No separate application is required.

David O. Triezenberg Memorial Scholarship This scholarship is funded by the Triezenberg family in memory of David O. Triezenberg, former teacher, former Calvin employee, and friend to students. It was established to encourage a new student from Illiana Christian High School in Lansing, Illinois or Grand Rapids Christian High School in Grand Rapids, Michigan to attend Calvin. Recipients must have graduated from either of the above high schools, demonstrate financial need, have a high school grade point average of 3.0 or higher, and not be receiving other scholarships awarded by the college. Selection of re-

cipients will alternate between the two high schools. Preference will be given to those preparing for a career in Christian service, such as teaching, social work, or work in the not-for-profit sector. One scholarship of \$1,200 was awarded for 2002-03. No separate application is required.

Cornelia and Marvin Vanden Bosch Scholarship Cornelia (Scholten) Vanden Bosch established this scholarship in 1981, shortly after the death of her husband, Dr. Marvin P. Vanden Bosch (Calvin, 1933), and in response to a grandson's accidental injury and subsequent disability. It was Mrs. Vanden Bosch's desire that disabled students be helped to obtain a Calvin education in spite of their disabilities. Although Mrs. Vanden Bosch is not college-educated, she is an avid supporter of Christian education, and particularly of Calvin, as was her late husband. This scholarship is established for physically disabled students with a disability that is likely to continue indefinitely. Candidates for new scholarships must have a previous grade point average of 2.5 or higher and demonstrate financial need. Two scholarships of \$1,500 each were awarded for 2002-03. Students who wish to be considered for this scholarship must send a letter of application describing their qualifications to the Office of Scholarships and Financial Aid by February 1. Current recipients will have their scholarships renewed if they are making satisfactory academic progress.

Edward D. and Jennie VanderBrug Memorial Scholarship The children of Mr. and Mrs. VanderBrug have established this scholarship in memory of their parents to encourage and enable promising students to uphold the Christian world and life view that was theirs. Scholarships are open to prospective first-year non-Anglos who are committed Christians with preference given to African Americans. Recipients must have the academic potential and promise to be successful at Calvin. Financial need is not required, but preference is given to those with need. Scholarships are renewed for up to three years for those who maintain a cumulative grade point average of 2.60 or higher or a grade point average of 3.00 or higher for the previous year. Preference for new scholarships is given to those who have been involved with any recruitment program that has introduced them to the value and advantages of studying at Calvin. Four schol-

arships of \$3,200 each were awarded for 2002-03. No separate application is required.

Joseph and Ralph Gelmer Vander Laan Memorial Scholarship This scholarship fund was established by the Vander Laan family in memory of brothers Joseph and Ralph Gelmer Vander Laan. 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 top students in any area. For 2002-03, six scholarships of \$2,150 each were awarded. Selection criteria include the student's academic record, character, and need. To apply for this scholarship, use the Upper-class Named Scholarship Application available from the Office of Scholarships and Financial Aid in January.

Anthony VanderLugt Memorial Engineering Scholarship Mr. Anthony VanderLugt earned his BS in 1959 at Calvin and the University of Michigan as part of Calvin's 3+2 program in engineering. He ultimately earned a doctorate in Applied Physics and at his death was a Professor Emeritus of Electrical Engineering at North Carolina State University. He came to Calvin from a farm family in rural Michigan. While at Calvin, he learned that he had academic potential, that he could compete with other students, and that there was a world out there where he could apply his talents. This scholarship was established to honor his memory and to help other students like him who are searching for a way to use their talents in engineering. Candidates must be entering the junior or senior year, be pursuing a degree in Engineering and have a minimum GPA of 3.2 or higher. To apply for this scholarship, use the Upper-class Named Scholarship Application available from the Office of Scholarships and Financial Aid in January.

Gerald and Jessica Vander Wall Scholarship Dr. and Mrs. Gerald and Jessica Vander Wall of Grand Rapids, Michigan have established this scholarship because of their desire to help deserving students obtain a Christian college education. Scholarships are awarded to first-year students based on their academic record and financial need. A cumulative grade point average of 2.5 or higher is required to be con-

sidered. Two scholarships of \$1,500 each were awarded for 2002-03. No separate application is required.

Van Dragt-Vander Wal Scholarship This scholarship was established as a tribute and a thank offering to God and is dedicated to Gordon and Angie Van Dragt, Wilma Van Dragt, and Marv and Ruth Vander Wal by their children, grandchildren, nieces and nephews. It is the hope and prayer of the Van Dragt and Vander Wal families that this scholarship will assist students in pursuit of a Christ-centered college education. They also hope that the lessons learned at Calvin will help each student not only in a career but also through lifetime service to God. Candidates may be entering any year of study and be pursuing any field of study. Preference will be given to non-traditional students at least 30 years of age or older. One scholarship of \$1,500 was awarded in 2002-03. Prospective students should send a letter detailing their qualifications to the Office of Scholarships and Financial Aid by February 1. Returning students should use the Upper-class Named Scholarship Application available in January.

William and Janice (Roosma) Van Dyke Scholarship Janice (Roosma) Van Dyke, a graduate of Lynden Christian High School in Lynden, Washington, has established this scholarship in memory of her late husband, William, who passed away of cancer in 1993 at the age of 45. Mrs. Van Dyke believes that the Lord led her to attend Calvin, and is grateful for the blessings she received while at Calvin and in subsequent years. The scholarship is intended to contribute to the enrollment of other students who, like herself, need some encouragement and resources. One new scholarship of \$1,000 is awarded each year to a senior from Lynden Christian High School who is planning to attend Calvin, with selection made by the high school. Scholarships are renewable for three additional years for recipients who maintain a cumulative grade point average at Calvin of 2.5 or higher.

William H. Van Dyke Memorial Scholarship Mrs. Janice Van Dyke of Oak Brook, Illinois has established this scholarship in memory of her husband William, who passed away of cancer in November of 1993. Each year, one scholarship of \$2,500 is awarded to a senior at Timothy Christian High School in

Elmhurst, Illinois. Selection is made by the high school. Scholarships are renewable for three additional years for students who have a cumulative grade point average at Calvin of 2.5 or higher.

Vermeer Scholarships The Vermeer Charitable Foundation of Pella, Iowa has established two scholarships at Calvin. Each year five or more students receiving Presidential Scholarships are designated as Vermeer Presidential Scholars, with funds for these scholarships provided by an endowment established by a gift from the Vermeer Foundation. A second scholarship, the Vermeer Charitable Foundation Scholarship, is awarded each year to a senior at a high school in the greater Pella community who is planning to attend Calvin the following year. Factors considered include Christian character, promise of growth, and participation and leadership in activities other than athletics outside the classroom such as church, community, and extra-curricular school activities. A high school grade point average of 3.0 or higher is required for consideration, and a Calvin grade point average of 3.0 or higher is required for renewal. One new scholarship of \$2,500 was awarded for 2002-03. The scholarship is awarded by Pella Christian High School.

Voetberg Scholarship for Students with Disabilities Mr. and Mrs. Robert Voetberg of Grand Rapids, Michigan have established this scholarship in honor of their son Mike, a physically disabled student who attended Calvin from 1987 to 1991. The Voetberg's desire is to recognize other promising students who are physically disabled and assist them in meeting their educational expenses. Candidates must be permanently physically disabled and must demonstrate the ability to do college-level work. Financial need is considered as well. Typically two \$1,500 scholarships are awarded each year. Prospective students who wish to be considered for this scholarship must send a letter of application describing their qualifications to the Office of Scholarships and Financial Aid by February 1. No separate application is required for returning students.

Wallace (Dutch) and Olive Waalkes Memorial Scholarship In 2002-03, one scholarship of \$2,800 was awarded to a pre-law student entering the junior or senior year at Calvin.

Preference is given to prospective seniors. Candidates must be planning to attend law school after graduating from Calvin and must have a grade point average of 3.0 or higher. To apply for this scholarship, use the Upper-class Named Scholarship Application available from the Office of Scholarships and Financial Aid in January.

Charles and Anna Wabeke Memorial Scholarship Calvin has received a gift from Mrs. Ruth Heerspink, daughter of Mr. and Mrs. Wabeke, which has been used to establish a scholarship fund. Scholarships are awarded to upper-class students who are planning to enter full-time Kingdom service, with preference given to those interested in missions. The student's academic record and faculty recommendations are primary factors in the selection. A grade point average of 3.0 or better is required and financial need is considered as well. One scholarship of \$2,200 was awarded for 2002-03. To apply for this scholarship, use the Upper-Class Named Scholarship Application available from the Office of Scholarships and Financial Aid in January.

Theodore C. Wagenaar Scholarship This scholarship supports student travel to Calvin's programs in the southwest United States. Dr. Wagenaar desires to strengthen students' interest in studying the cultures of the Southwest. In that light, preference will be given to students pursuing a social science or an education degree. Applicants must also demonstrate financial need. The scholarship is intended to assist with expenses associated with an interim or semester spent off campus in the southwest United States. Typically one scholarship of \$400 is awarded. No separate application is required.

Samuel L. Westerman Foundation Scholarship Mr. Samuel L. Westerman established a foundation in 1971, and upon his death in 1984, his entire estate went to the Foundation. The Foundation graciously supports a wide range of worthy causes in education, arts and music, health, religion, and science. Candidates for this scholarship must be entering the junior or senior year, demonstrate financial need, and have a cumulative grade point average of 3.0-3.49. Recipients must be active in the Student Volunteer Service at Calvin or in other community or volunteer work. Four scholarships of \$2,500 each were

awarded for 2002-03. To apply for this scholarship, use the Upper-Class Named Scholarship Application available from the Office of Scholarships and Financial Aid in January.

Peter and Esther Westra Family Honors Scholarship This scholarship provides the funds for Honors Scholarships to be awarded to prospective first-year students from Kalamazoo Christian High School in Kalamazoo, Michigan. Preference is given to students with financial need. If there are no qualified candidates from Kalamazoo Christian High School, prospective students from other schools in the Kalamazoo, Michigan area will be considered. No separate application is required.

Rodney and Patricia Westveer Scholarship As Calvin alumni, Rodney and Patricia Westveer are grateful for having had the opportunity to experience the guidance, the challenges, and the excellence that Calvin offers. Through this scholarship they hope to provide women, age thirty and beyond, with children, the opportunity to attend Calvin as they pursue new directions for their lives. Candidates can be entering any class level and can be pursuing any academic field. First preference will be given to women over the age of 30 with children. Second preference will be given to minority students pursuing an education degree. For 2002-03 one scholarship of \$1,500 was awarded. To apply for this scholarship use the Upper-class Named Scholarship Application available from the Office of Scholarships and Financial Aid in January.

Dr. Morris Wilderom Scholarship The family of the late Dr. Morris Wilderom has established a scholarship in his memory to be awarded to students in medicine. Dr. Wilderom graduated from Calvin in 1931 and practiced medicine until his death in 1985. Candidates for this scholarship must be pursuing a pre-med program, entering the junior or senior year, and be in need of financial assistance. Other factors considered in the selection include the student's motivation, Christian character, and ability to contribute to the medical profession in future years. Two scholarships of \$1,700 each were awarded for 2002-03. To apply for this scholarship, use the Upper-Class Named Scholarship Application available from the Office of Scholarships and Financial Aid in January.

Bernard and Carol De Mots Woltjer Family Scholarship Mr. Bernard and Mrs. Carol Woltjer have established this scholarship because of their desire to share with others the wonderful blessings of a Christ-centered education at Calvin. They are both graduates of Calvin and celebrate the faithfulness of God to their family as three generations have been educated at Calvin. Recipients must be entering the first year at Calvin and have a high school grade point average of 2.5 or higher. Preference will be given to descendants of Mr. and Mrs. Woltjer. If no descendants are identified, scholarships will be awarded to students graduating from Unity Christian High School in Hudsonville, Michigan who have demonstrated leadership in church, community, and school activities other than athletics. Two scholarships of \$1,700 each were awarded for 2002-03. Descendants of Mr. and Mrs. Woltjer should send a letter to the Office of Scholarships and Financial Aid by February 1 indicating their relationship to the Woltjers.

Woodlawn Christian Reformed Church Minority Scholarship Each year the Woodlawn Christian Reformed Church of Grand Rapids, Michigan provides the college with funds to be awarded to North American ethnic minority students who are personally committed to Jesus Christ and His Church. Typically, scholarships range from \$1,000 to \$2,000. A minimum grade point average of 2.5 is required. No separate application is required.

Gertrude Pott Zwiep Memorial Scholarship Gertrude Pott Zwiep was an immigrant who, in 1916, at 15 years of age, came to America from the Netherlands with her parents and six siblings. After her father died three years later, Gertrude was willing to work to help make an education possible for her five brothers, all of whom became professionals. Mrs. Zwiep understood the value of an education even though she was financially unable to afford it for herself. She and her husband loved to travel internationally, especially to their fatherland, and now her children wish to give a spiritual blessing to an international student to attend Calvin. Preference is given to students from the Netherlands, Germany, or Hungary in that order. Candidates must have a grade point average of 3.00 or higher and financial need. In 2002-03, one \$2,800 scholarship was awarded. No separate application is required.

Departmental Scholarships Funded by Donors

A number of other scholarships have been established by donors to recognize students in particular departments. Applications for these scholarships must be submitted to the department for which the scholarship is designated, except for nursing scholarships. Applications for nursing scholarships must be submitted to the Office of Scholarships and Financial Aid.

Alumni Association

Alumni Association First-Year Scholarship. Scholarships funded by the Calvin Alumni Association are awarded to 5 incoming first-year students from the United States and Canada. These scholarships, of \$1,000 each, are awarded by the Office of Scholarships and Financial Aid to students with good academic records (3.0 or higher) and are based on need. Preference is given to students who do not receive one of the other scholarships awarded by the college. No separate application is required.

Alumni Association Interim Scholarship. The Calvin Alumni Association is supportive of students seeking off-campus study experiences during interim. The organization has made a number of travel grants available to Calvin students, in amounts ranging from \$250 to \$500. Applications are available from the Office of Scholarships and Financial Aid in September.

Alumni Association Legacy Scholarship. The Calvin Alumni Association has allocated at least seven scholarships, of \$1,000 each, for incoming first-year students who are children of Calvin alumni to celebrate the legacy of Calvin attendance in succeeding generations. Both parents of interested candidates must have attended Calvin, with preference given to candidates who also have at least one grandparent who attended. The selection committee looks at legacy numbers (how many parents and grandparents attended Calvin prior to candidate), cumulative grade point average, volunteerism/community service, financial need, and other scholarships received. To apply, contact the Calvin Alumni and Public Relations Office by March 15 and submit family history of Calvin attendance.

Alumni Association Minority Scholarship. Each year the Calvin Alumni Association provides funds for scholarships for North American ethnic minority students. Scholarships are awarded by the Office of Scholarships and Financial Aid to both prospective and returning students. Primary factors in the selection are the student's academic record, motivation, character, potential for success at Calvin, and financial need. For 2002-03, three scholarships were awarded in the amount of \$2,000 each. No separate application is required.

Alumni Association Volunteerism Scholarship. The Calvin Alumni Association awarded seven scholarships of \$1,400 each for 2002-03 to students who have been active in volunteer work on and off the Calvin campus through membership and involvement in student and/or community organizations (where payment for services has been minimal or nonexistent). Students who wish to qualify for these scholarships must also be able to articulate a connection between their volunteer activity and life goals, and have a minimum cumulative grade point of 2.5. Candidates should obtain an application from the Alumni and Public Relations Office in November of their sophomore or junior year and return it by the due date. A team of Alumni Association Board members reviews the applications and interviews finalists during Homecoming weekend each February.

Brian De Wall Lakeshore Scholarship. On January 25, 1997, a terrible automobile accident took the life of Calvin senior Brian De Wall (Fruitport, Michigan) and seriously injured Moni Anders (Galena, Ohio), Lori Powell (Worthington, Ohio), and Matt Remein (Silver Spring, Maryland). Moni eventually recovered, but Lori and Matt remain limited by brain injury. In October 1999, a group of 46 Calvin students, staff, and alumni (organized by the Chaplain's Office) ran in the Chicago Marathon to raise money and provide support to the families of the three Calvin students still daily affected by that crash. The endowed dollars from this fundraising effort are entrusted to the alumni chapter leadership in the areas where these students lived to give thanks to God for their lives and to provide assistance for future Calvin students in their names. The Lakeshore Alumni Chapter awarded one

scholarship of \$750 to a first-year student from western Michigan in 2002-03. Interested candidates should apply through the Lakeshore Alumni Chapter.

Cornelius and Marian Joose Memorial Scholarship This scholarship was established with gifts from Mr. Harry and Mrs. Barb Kampenga in honor of their parents, Mr. Cornelius and Mrs. Marian Joose. Typically, the Southeast Wisconsin Alumni Chapter awards one scholarship of \$1,500 to an upper-class student. Applications are available from the Alumni and Public Relations Office at Calvin.

Lori Powell Central Ohio Scholarship. On January 25, 1997, a terrible automobile accident took the life of Calvin senior Brian De Wall (Fruitport, Michigan) and seriously injured Moni Anders (Galena, Ohio), Lori Powell (Worthington, Ohio), and Matt Remein (Silver Spring, Maryland). Moni eventually recovered, but Lori and Matt remain limited by brain injury. In October 1999, a group of 46 Calvin students, staff, and alumni (organized by the Chaplain's Office) ran in the Chicago Marathon to raise money and provide support to the families of the three Calvin students still daily affected by that crash. The endowed dollars from this fundraising effort are entrusted to the alumni chapter leadership in the areas where these students lived to give thanks to God for their lives and to provide assistance for future Calvin students in their names. One scholarship of \$750 was awarded to a first-year student from the Central Ohio area in 2002-03. Interested candidates should send a letter describing their academic qualifications and career goals to the Office of Scholarships and Financial Aid by February 1.

Mathew Remein D.C. Area Scholarship. On January 25, 1997, a terrible automobile accident took the life of Calvin senior Brian De Wall (Fruitport, Michigan) and seriously injured Moni Anders (Galena, Ohio), Lori Powell (Worthington, Ohio), and Matt Remein (Silver Spring, Maryland). Moni eventually recovered, but Lori and Matt remain limited by brain injury. In October 1999, a group of 46 Calvin students, staff, and alumni (organized by the Chaplain's Office) ran in the Chicago Marathon to raise money and provide support to the families of the three

Calvin students still daily affected by that crash. The endowed dollars from this fundraising effort are entrusted to the alumni chapter leadership in the areas where these students lived to give thanks to God for their lives and to provide assistance for future Calvin students in their names. The D.C. Area Alumni Chapter awarded one scholarship of \$750 to a first-year student from the greater Washington, D.C. area in 2002-03. Interested candidates should apply through the D.C. Area Alumni Chapter.

Art Department

A.M.D.G. Scholarship A.M.D.G. Architects, Inc. of Grand Rapids, Michigan established this scholarship in an attempt to assist a promising student in the field of architecture. More specifically, this scholarship is an attempt to continue the diversification of both Calvin and the architecture field. The goal of this scholarship is to encourage women and minorities to consider architecture as a profession. In light of this goal, preference for this scholarship will be given to ethnic minority or international students, women and/or other than Christian Reformed Church members. Candidates will be sophomores, juniors, or seniors pursuing a pre-architecture program. One scholarship of \$1,500 was awarded in 2002-03.

Edgar G. Boevé Art Scholarship Through the generosity of alumni and friends, this scholarship honors Edgar G. Boevé for his contribution to the Art Department, the college, the denomination, and the larger community as an art teacher, the first chair of the Art Department, art consultant, artist, and leader. Two scholarships of \$2,600 each are available for any art student enrolled in any art program. Selection will be made by the members of the Art Department based upon financial need, grade point average, and an essay describing interests, career goals, and a Christian commitment. A grade point average of 3.0 in Art Department courses is required.

Sandra Bowden Art Scholarship Mr. Robert Bowden from New York has established this scholarship in honor of his wife Sandra, who is an artist. They want to encourage Christian artists to prepare to become leaders in the field of art. The \$750 scholarship is available to a sophomore, junior, or senior major-

ing in art who has a minimum grade point average of 2.5 or higher. The recipient is expected to send slides of his or her art to Sandra Bowden and also an explanation of his or her motivation for doing one work of art represented by a slide.

Henry Van Andel Memorial Scholarship Mrs. Dorothea Vergeer has established this scholarship in memory of her father, Henry J. G. Van Andel, professor of Dutch language, literature and culture at Calvin from 1915 - 1950. Professor Van Andel became especially beloved for his courses in Dutch and Flemish painting. Many of his students began with him a life-long journey of enjoyment in fine arts. It is Mrs. Vergeer's hope that this scholarship will provide encouragement to young Calvin students who wish to pursue studies in art. One scholarship of \$2,400 was awarded in 2002-03.

Pat Snyder Verduin Scholarship The college has received a gift from Mr. Calvin and Mrs. Patricia Verduin of Grand Rapids, Michigan, the income from which is used to provide a scholarship of \$1,000 to a prospective junior or senior majoring in art. The purpose of the scholarship is to encourage artists who are Christians to prepare for a life of service in the field of art directed by Christian values. Candidates for the scholarship must have a minimum grade point average of 2.5 or higher and will be required to prepare a paper describing a work of art they have created. Financial need will be considered as well.

Johanna Kempers Wyngaarden Scholarship In gratitude to God for His blessings over the years, Dr. James B. Wyngaarden of Durham, North Carolina established this scholarship to honor his mother, Mrs. Johanna Kempers Wyngaarden. The purpose of this scholarship is to strengthen Christian education in music and fine arts at Calvin by providing funds for scholarships for worthy students. Preference will be given to students of piano and painting. Candidates should be pursuing a degree in either Music or Art.

Biology Department

Martin and Frances Karsten Biology Scholarship This scholarship is provided by a gracious bequest from the estates of Martin and Frances Karsten. Martin Karsten faithfully served

Calvin as professor of biology for thirty years and concentrated in the areas of botanical sciences. Candidates for this scholarship must be Biology majors entering the junior or senior year. Preference will be given to those concentrating in botany. Four scholarships of \$2,500 each were awarded for 2002-03.

Chemistry Department

John A. Bolt Memorial Scholarship This scholarship has been established to honor John A. Bolt who was a Calvin graduate, a research chemist, and Director of Research for the American Oil Company. This scholarship recognizes his love for the field of science and his intense interest in encouraging young people to seek excellence in education. Candidates must be entering the junior or senior year, majoring in Chemistry or Biochemistry, and have a cumulative grade point average of 3.0 or higher. Preference will be given to those pursuing a career in teaching and/or research in the sciences. Two scholarships of \$3,250 each were awarded for 2002-03.

Peter and Margaret (Bell) De Haan Chemistry Scholarship Mrs. De Haan has established a scholarship fund for the benefit of students in chemistry in memory of her late husband, Peter. Awards are based on Christian character, personality, possible financial need, and promise of growth. Candidates must be Chemistry majors entering the junior or senior year. One scholarship of \$2,700 was awarded for 2002-03.

Dow Chemical Company Foundation Scholarship The Dow Chemical Company Foundation has established a scholarship of \$4,000 per year for four years to a first-year student who intends to major in Chemistry or Biochemistry. Eligible candidates must be U.S. citizens and have a sincere intent to continue in chemistry as a chosen career after graduation. In order to continue the scholarship from year to year, the recipient must continue in a chemistry or biochemistry major, intend to pursue a career in chemistry, and obtain a minimum grade of 'B' in each credited class at Calvin.

Dr. and Mrs. Enno and Lucile Wolthuis Chemistry Scholarship Dr. Enno Wolthuis, Professor of Chemistry at Calvin from 1949-1976, has established a scholarship fund for the ben-

efit of Chemistry and Biochemistry majors who have an interest in pursuing a career in research or college-level teaching. Candidates must be Chemistry or Biochemistry majors entering the sophomore, junior or senior year and must have a cumulative grade point average of 3.0 or higher. One scholarship of \$2,400 was awarded for 2002-03.

Communication Arts & Sciences

Department

Ervina Boevé Scholarship for Theater Arts Through the generosity of former students and friends, this scholarship honors Mrs. Ervina Boevé for her contribution to the theater and the college while serving as Director of Thespians. Each year a scholarship of at least \$1,700, to be applied toward tuition, will be awarded by the Department of Communication Arts and Sciences to a junior speech major with a theater arts concentration. Recipients are chosen on the basis of academic record and proven ability and dedication in performance, production, or scholarly research in theater.

Calvin Media Scholarship Norman and Crystal Unema have established this scholarship, which is awarded to a student entering the junior or senior year and planning on a career in journalism, radio, or television broadcasting. Candidates for this award will be nominated and selected by the CAS Department. In 2002-03, two scholarships of \$2,100 each were awarded.

CAS Department Mentoring Scholarship The Communication Arts and Sciences Department at Calvin has established this scholarship in an effort to recruit excellent freshmen to Calvin. The program is funded by gifts from the CAS faculty and other contributions. Ordinarily the award will apply to just the freshman year, but may be renewable if the situation warrants. The recipient of the award will work closely with a faculty member for at least 5 hours weekly as a research assistant for the academic year. The department will look for applicants with the promise of becoming communication educators or industry leaders. The award will be both a financial and professional incentive to attract to Calvin the very best students who might otherwise go elsewhere. No separate application is required.

David J. Holquist Scholarship This scholarship is given annually in honor of a former Calvin professor of Communication Arts and Sciences who influenced the lives of many students through his personal and professional commitment to redeeming interpersonal communication. The \$500 award is given to a junior or senior who has demonstrated a commitment to serving others through such activities as community service, church involvement, small group leadership, and the support and encouragement of other students. Candidates for this scholarship will be nominated and selected by the CAS Department.

John Miller Scholarship Rev. John Koole established this scholarship in honor of Mr. John Miller, who supported him in his love for music and drama and assisted him financially in his Calvin education. Typically, one scholarship of \$1,000 will be awarded to junior or senior CAS majors who demonstrate excellence in theatrical ability. Candidates for this scholarship will be nominated and selected by the CAS Department.

Ann Janssen Noteboom Scholarship This scholarship was established by William and Ann Noteboom. Dr. Ann Noteboom taught at Calvin for thirty-five years. Up to two awards of \$1,950 each will be awarded to junior or senior CAS majors who show outstanding promise in the areas of oral interpretation and/or public address.

Thomas J. Ozinga Internship Award Presented by Professor Thomas Ozinga, this \$1,000 award is given to a student who has been an excellent intern. Candidates will be nominated and selected by the CAS department.

Vande Guchte Award in Communication Disorders Presented by Dr. Marten Vande Guchte, this annual award will be given to an outstanding student who intends to enter the profession of speech-language pathology or audiology. The Communications Disorders program advisor will recommend a nominee to the department on the basis of the student's academic record, Christian character, and commitment to service in the speech and hearing profession.

Grace Dykstra Vellenga Scholarship Grace Dykstra Vellenga had a keen interest in effec-

tive communications and was active in giving public readings and elocution instruction to private students. She was also an active witness for Jesus Christ and frequently used her speaking skills in serving as a Bible class teacher and Bible study group leader. Her children have established this scholarship in her honor to support a student desiring to integrate their faith with a career in communications. Preference will be given to students majoring in telecommunications, to those planning a career in the Christian media, and to those who demonstrate the ability to express the importance of their Christian faith in their lives. In 2002-03, one \$3,500 scholarship was awarded.

Computer Science Department

Hollander Consulting, Inc. Information Technology Scholarship Mr. Paul and Mrs. Vonda Kooima of Hollander Consulting, Inc. provide the college with \$1,000 each year to award a scholarship to a student pursuing a major or program in Computer Science or Information Technology. Candidates must be entering the junior or senior year, have a cumulative grade point average of 2.8 or higher, and give some evidence of financial need.

Economics and Business Department

Clarence and Nelly Battjes Scholarship Clarence Battjes was a businessman who attended Calvin from 1924 to 1925. His wife Nelly established this scholarship in his memory in hopes of encouraging other Calvin students in their pursuit of business knowledge. Applicants must be junior or senior business majors with a minimum grade point average of 3.0. Three scholarships were awarded in 2002-03.

John and Judith Bielema Economics and Business Scholarship The Bielemas are strong supporters of Christian liberal arts education and have provided this scholarship for a student entering the junior year in the Economics and Business department who demonstrates promise of leadership and the ability to integrate Christianity in the chosen field of study. Financial need is a secondary consideration.

Lawrence D. Bos, Sr. Family Scholarship This scholarship celebrates Mr. Bos's long career in the life insurance business in the Grand Rap-

ids area. It has been established to recognize and encourage deserving students in the fields of business and economics to promote responsible Christian capitalism in their business lives and in their contributions to the economic well-being of the community. Candidates must be entering their junior or senior year with at least a 3.5 grade point average.

Bouwer Mentoring Scholarship Mr. and Mrs. John and Marian Bouwer established this scholarship for students in business, especially those who would benefit from a mentoring relationship. Criteria include leadership or entrepreneurial potential, and a grade point average of 3.0 or higher.

Margaret and Douglas Bush Family Business Scholarship The Bush family has provided the college with funds to encourage worthy students to prepare for positions in business and business education. Scholarships are awarded each year on the basis of diligence, character, commitment to service of the Lord and humankind, 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 3.0 or better is required.

Gordon and Rose Buter Business Administration Scholarship The Gordon Buter family established this scholarship for students majoring in Business. Gord Buter was an active supporter of the Calvin community and the Alumni Association for several years. Candidates should be entering the senior year with at least a 3.0 grade point average. Financial need is a secondary consideration.

Frank and Bernice Deppe Family Scholarship Frank and Bernice Deppe have been longtime supporters of Christian education and of Calvin. Mr. Deppe owned and operated a construction and tool equipment business and the Deppes wish to provide a scholarship to a junior or senior student majoring in Business, preferably aiming at a career in sales and marketing, with a grade point average of 3.0 or higher.

DeVos Business Scholarship Mr. and Mrs. Dick DeVos established this scholarship for incoming students who are planning to pursue an education in Economics or Business. This scholarship is intended to support students who demonstrated strong academic achievement throughout their high school

careers and have financial need. Preference will be given to those who are first generation college students. This scholarship can be renewed throughout the recipients' years at Calvin, given they maintain a certain grade point average and continue to pursue a degree in Economics or Business.

Lloyd H. De Vries Scholarship This scholarship was established for students pursuing a Business major. Preference is given to students who have had a disrupted college career and are self-supporting. Preference may also be given to students who intend to own their own business at some point in the future. Recipients must be entering their junior or senior year with at least a 2.7 grade point average.

Patricia S. Duthler Scholarship The Duthler family has enjoyed a long legacy of entrepreneurship, and this fund springs from Patricia's gratitude for that gift. The scholarship invests in students committed to Christian leadership in the business world and is awarded to students who have a grade point average of 3.0 or higher. Preference is given to international students who plan to return to their native country and begin their own business. Financial need is a primary consideration.

J. Herman and N. Lucile Fles Scholarship Established by the family of Mr. and Mrs. J. Herman and N. Lucile Fles as a tangible expression of the Fles's love for and dedication to Christian liberal arts education, this scholarship is awarded to a student majoring in Business, with first consideration given to graduates of Grand Rapids Christian High School.

Marsha Greenwood Memorial Scholarship Marsha Greenwood's two children are graduates of Calvin with degrees in Business and Education. Mrs. Greenwood desired that a bequest from her estate be used to establish a scholarship for Education and Economics and Business majors. This scholarship will be awarded yearly but will alternate on an annual basis between Education majors and Economics and Business majors. Candidates must be entering the junior or senior years (Post BA is allowable for education students) and have a grade point average of 3.0 or better.

Robert and Harriet Hasper Accounting Scholarship The Hasper family established this scholarship to express gratitude to God for the

excellent Christian education the Hasper family received at Calvin and to express appreciation to Mr. Gordon Buter, who interested Robert in accounting. The scholarship is awarded to students majoring in accounting who are entering their junior or senior year, display a strong Christian commitment, and show potential for leadership. A grade point average of 3.0 or higher is required. Financial need is a secondary consideration.

James R. Hertel Scholarship Mr. James Hertel established this scholarship in appreciation for the fine education he received at Calvin. The recipient should be a business or economics student entering the junior or senior year. Although the award is not based on the student's academic record, a grade point average of 2.7 is required.

John and Marge Kuyers Family Scholarship This scholarship was established to provide support to students planning a career in business or accounting and demonstrating the potential to make a difference in business as a Christian. Recipients must be entering their junior or senior year with at least a 2.7 grade point average. Financial need is a secondary consideration.

Rietberg Family Scholarship The Rietberg family has established this scholarship for students who exhibit a commitment to the highest ethical and moral standards in pursuing a career that provides for the exercise of Christian leadership in business or public administration. Students must be entering the junior or senior year, majoring in business or public administration, and planning to participate in an internship or in the cooperative education program.

Roels Business Scholarship This scholarship was established by Shirley and John Roels when Shirley was a faculty member of the Department of Economics and Business. It is meant to assist business students whose pre-college support has been limited because of economic, social, educational, or familial factors. This scholarship is awarded to students entering their junior or senior year who have potential for leadership in the fields of business or economics. Applicants should be first generation college students with a grade point average of 3.3 or higher.

Jacob and Jennie Tuinstra Scholarship Alumna Doris Tuinstra, in honor of her parents, has provided a fund to generate income for scholarships to be awarded to sophomore or junior women students for their junior or senior year at Calvin. Recipients must be in a business major, a B. S. in Accountancy program, or a group major with an emphasis in business. Criteria for selection are primarily motivation and potential for Christian service in a business career, and secondarily academic record and financial need.

Charles J. VanDenBerg Family Business Scholarship The family of Charles J. VanDenBerg has been greatly blessed by God with both spiritual growth and as trustees of His financial resources. They are grateful to be able to share these resources with those who display financial need. They also feel it is the responsibility of each Christian to influence and change the world by being a beacon of light to the world. To this end, they would like to encourage the continuing conversation on what it means to be a Christian in business. This scholarship is awarded to students entering their junior or senior year who have a grade point average of 3.0 or better.

Herbert and Doris Vander Mey Scholarship Mr. and Mrs. Vander Mey established this scholarship for majors in economics and business out of their conviction that Christian leadership is needed in all areas of human endeavor. This scholarship is intended to support students who demonstrate creativity and enthusiasm for meeting the changing management needs of an international and global economic order. Students entering the junior or senior year with a minimum grade point average of 3.0 are eligible to apply.

Randall K. Vander Weele Memorial Scholarship Randall Vander Weele was killed in an accident shortly after his graduation from Calvin in 1981. His family and friends have established a fund to generate income for scholarships to be awarded to junior students for their senior year in a business major or a B.S. in Accountancy program. Criteria for selection include academic record and potential for Christian leadership in business.

Kenneth J. Van Spronsen Memorial Scholarship This scholarship has been established in memory of Kenneth J. Van Spronsen by his

wife, family, and friends. Ken, a 1989 graduate of Calvin, was ambitiously pursuing a business career when he was tragically killed in an automobile accident in October 1992. This award is intended to aid an upper-class student in pursuit of a business major or group major with an emphasis in business. Eligibility requirements include a minimum B- average and financial need. In addition, the student must exhibit leadership qualities as well as initiative in pursuing a business career. A non-resident of Michigan is preferred.

Bernard Vellenga, Jr. Scholarship The late Mr. Bernard Vellenga's wife and family have established this scholarship in Mr. Vellenga's memory to recognize his Christian witness, example, and desire to help Christian young people pursue their goals in the business and economic life of our culture. Candidates must be entering the junior or senior year, have a cumulative grade point average of 3.0 or higher, some evidence of financial need, and be pursuing a program in Business Administration or Accounting. If these criteria are met, preference is given to those pursuing a program in Business Administration, to those who have been involved in volunteer and extracurricular activities, and to those who demonstrate the ability to express the importance of their Christian faith in their lives.

John and Dorothy Wiest Accounting Scholarship This scholarship was established to acknowledge the Wiests' appreciation for Calvin students who have worked for them in the past. The scholarship is awarded to students majoring in accounting who are entering their junior or senior year. A grade point average of 3.0 or higher is required. Financial need is a secondary consideration.

Scholarship for Women in Business Barbara and Melvin VanderBrug of Detroit, Michigan established this scholarship to encourage women students, particularly those with entrepreneurial interests, to enter the for-profit business world. The recipient should be a female business major entering her junior year. This scholarship is also renewable for the senior year. It is awarded in the fall of each year.

Education Department

Rose M. Bloem Scholarship Rose and Harry Bloem have been long-time supporters of

Christian education. In addition, they have had a lengthy and trusted relationship with Calvin. Rose graduated from Calvin in the field of education and Harry has served on the Calvin Board of Trustees. Three of their children - Jim, Nancy, and David - are alums of Calvin. Their fourth child, Michael, is developmentally disabled and has had many wonderful experiences with the special education teachers he has encountered. Rose and Harry are very grateful to those dedicated special education teachers who, in so many ways, touch the lives of students with developmental disabilities. It is the desire of the Bloem family to provide this scholarship to a Calvin student pursuing a degree in Special Education with the hope that each recipient will demonstrate the same warm and caring characteristics they saw in those teachers who came in contact with Michael. Candidates must be entering the junior or senior year. Post BA students pursuing teacher certification are eligible also.

John L. De Beer Memorial Scholarship This scholarship is established through the gifts of Mrs. Ann Heyns De Beer and family in honor of the contributions to Calvin of John L. De Beer, long-time professor of education and founder and director of the Instructional Resources Center. Candidates for this scholarship should have at least a cumulative grade point average of 3.0 on a 4.0 scale, be a current Calvin student entering the junior or senior year, and be pursuing a program in education. Financial need, as defined for government purposes, is not required, but there should be evidence that the scholarship is needed to help meet educational expenses. A \$500 scholarship was awarded in 2002-03.

Kevin Dale De Rose Memorial Scholarship Kevin De Rose was killed in an accident during his junior year at Calvin in 1989. His family and friends have established this scholarship in his memory to be awarded annually to a student who demonstrates a love for providing Christian service in non-academic areas of life, as Kevin did. Candidates for this scholarship must be admitted to the teacher education program and have a cumulative grade point average of 3.0 or higher. If there are several candidates, preference will be given to those with the greatest need and those planning to pursue a career in teaching English at

the secondary level. During the 2002-03 academic year, one \$1,900 scholarship was awarded.

DeVries-Post Teacher Education Scholarship Mr. John W., Jr. and Dr. Arden R. (DeVries) Post have established this scholarship to assist future educators in the teacher education program at Calvin College. Because of their special interest in minorities and persons with disabilities, the scholarship is directed first to an individual from either of these groups who demonstrates financial need. If there are no students who qualify on this basis, other students with a record of service to minorities or to those with disabilities will be considered. Three scholarships of \$1,000 each are awarded annually.

Beulah B. Goodenough Memorial Scholarship This scholarship is established by Mr. John and Mrs. Mary Gideon in memory of Mary's mother, Mrs. Beulah Goodenough, who was a first grade teacher in the New Jersey Public Schools for over 35 years. It is their belief, as public school educators, that the public schools in our country need the influence of committed Christian teachers and students if our society is going to make a positive change. Candidates for this scholarship should have a cumulative grade point average of 3.0 or higher, be current Calvin students entering the senior year, be planning to enroll full-time in the next academic year, be pursuing a program in elementary education, and be committed Christians planning to teach in public schools. Preference will be given to candidates who themselves have attended public schools. Financial need as defined for government programs is not required, but there should be some evidence that the scholarship is needed to help meet educational expenses. One scholarship of \$1,500 is awarded annually.

Marsha Greenwood Memorial Scholarship Marsha Greenwood's two children are graduates of Calvin with degrees in Business and Education. Mrs. Greenwood desired that a bequest from her estate be used to establish a scholarship for Education and Economics and Business majors. This scholarship will be awarded yearly but will alternate on an annual basis between Education majors and Economics and Business majors. Candidates must be entering the junior or senior years (Post BA is

allowable for education students) and have a grade point average of 3.0 or better.

Mae Groeneveld Scholarship A lifelong Christian, Mae Groeneveld believes her education at Calvin, along with the support and guidance of her family and church, were the reasons she was successful as a teacher, a citizen, and a Christian. Mae never forgot where she came from, and in order to preserve that notion, she has established this scholarship fund. Candidates must be enrolled at Calvin with a grade point average of 3.0 or higher, planning a career in elementary or middle school education, and have financial need. Preference is given to students from West Michigan. Two \$1,150 scholarships were awarded in 2002-03.

David and Shirley Hubers Scholarship David and Shirley Hubers have a long-standing commitment to Christian education, which was passed on to their daughters, Stephanie, who graduated from Calvin with a BA in Education, and Lisa, who graduated with a BS in Nursing. This scholarship is established in their honor to help students entering the teaching and nursing professions. The award alternates yearly between the Education and Nursing departments. Scholarship candidates must have a cumulative grade point average of 3.0 or higher, be entering the junior or senior year, demonstrate financial need, and exhibit potential for Christian service. For the 2002-03 academic year, two scholarships of \$1,750 each were awarded.

Corrine E. Kass Graduate Studies Scholarship This scholarship was established for the purpose of assisting experienced teachers to return to full or part-time education in one of the Master of Education programs at Calvin. To be eligible for the scholarship, a student must, in addition to fulfilling requirements for admission to the graduate programs, have an undergraduate grade point average of 3.3, must be committed to leadership responsibilities in the education profession, must demonstrate financial need based on criteria for financial aid, and must be enrolled for graduate credit in a minimum of one to two courses per semester.

Gerald L. Klein Memorial Scholarship This scholarship has been established by Mrs. Beatrice Klein in memory of her late husband,

Gerald L. Klein, a strong supporter of Calvin during his lifetime. It is established in thankfulness to God and in appreciation of what the college has meant to the Kleins' children and grandchildren. Three of the Kleins' children have graduated from Calvin in the field of education. The scholarship is intended to help students in the junior or senior year who are planning to pursue a career in elementary or secondary Christian education. Candidates for the scholarship must meet the following criteria: be a current Calvin student entering the junior or senior year and planning to attend full time; be pursuing a program in elementary or secondary education, including special education; and have a cumulative grade point average of 2.75 or higher. Financial need as defined for government programs is not required, but there should be some evidence that the scholarship is needed to help meet educational expenses. If the criteria are met, preference will be given to applicants who demonstrate Christian character and concern for others through active involvement in church and community activities. In 2002-03, two \$1,600 scholarships were awarded.

John A. Kuiper Family Scholarship This scholarship has been established by Mrs. Vivian J. Kuiper and her family in memory of their husband and father, Mr. John A. Kuiper, a Chicago businessman who was deeply committed to Christian education. He served on the school board of the Roseland Christian School in the Chicago, Illinois area numerous times because he believed in the value of providing a Christ-centered education, not only for his own four children, but also for others in the broader Christian community on the south side of Chicago. He served faithfully and diligently on the school board as one expression of gratitude to his loving Savior. His wife Vivian, formerly a teacher at Roseland Christian School, shared his enthusiasm for Christian education. Candidates for this scholarship must be current Calvin students planning to enroll full time the following year; entering the junior or senior years or be post-baccalaureate students (fifth-year seniors are eligible as well as seniors who are in their fourth year); pursuing programs in education; have cumulative grade point averages of 3.0 or higher; and demonstrate Christian character and concern for others through active involvement in church and community

activities. Although financial need as defined for government programs is not required, there should be evidence that the scholarship is needed to help meet educational expenses. If the previous criteria are met, preference will be given to candidates planning to pursue a career in a Christian school in an urban setting. Three scholarships of \$1,000 each were awarded in 2002-03.

Hazel Lawson Teacher Education Scholarship Mr. Hanford Lawson established this scholarship in honor of his wife Hazel, a dedicated wife, mother and volunteer. Since Hazel truly enjoyed teaching young children, this scholarship will be awarded to a student who has an interest in early childhood education. In addition to meeting the other criteria, the recipient will be able to articulate a dependence on the Lord and his guidance according to Proverbs 3:6, "In all your ways acknowledge Him and He will make your paths straight." Candidates must be entering the junior or senior year (5th year students or those returning for an Education degree or Teaching Certification are also eligible) and have a grade point average of 3.0 or better.

J.C. Lobbes Scholarship Mr. J.C. Lobbes served as a teacher and administrator in Christian schools for 54 years. He served in schools in Edgerton, Minnesota and Rock Valley, Iowa. This scholarship has been established in his honor to help students who are entering the teaching profession. Candidates for this scholarship must be entering their junior or senior year in the teacher education program, have a cumulative grade point average of 3.0 on a 4.0 scale, and give some evidence that the scholarship is needed to help meet educational expenses. Preference will be given to descendants of Mr. Lobbes' former students when they identify themselves on the application form. Two scholarships of \$1,100 were awarded in 2002-03.

Mervenne Education Scholarship Mrs. Laurie Hekman established this scholarship in honor of her parents, Arthur and Kathryn Mervenne. Mrs. Hekman wishes to specifically support students pursuing an education degree, because of the important influence of Christian teachers on the lives of young people. Candidates must be entering the junior or senior year, be pursuing an education degree and have a grade point average of 3.0 or better.

Jay and Lois Mol Family Scholarship Mr. and Mrs. Jacob 'Jay' Mol, on account of their strong feeling for Christian education at all levels, established this scholarship to help in the training of education students at Calvin who intend to become career teachers in Christian elementary and secondary schools. Candidates for this scholarship must be current students entering the junior or senior year and be pursuing a program in education. First consideration will be given to those planning to pursue a career in Christian education. Ordinarily, a cumulative grade point average of 3.0 will be required. Candidates with lower grade point averages may be considered if there are special circumstances that warrant it. Financial need as defined for government programs is not required, but there should be evidence that the scholarship is needed to help meet educational expenses. The donors are open to helping students whose parents are either unable or unwilling to help the student as much as the standard financial aid form evaluation assumes. If the previous criteria are met, preference will be given to students who have worked hard, volunteered, and been involved in extracurricular activities. One new scholarship of \$2,000 was awarded for 2002-03.

Patti J. Morren Memorial Scholarship This scholarship was set up by Mr. Jay and Mrs. Kathleen Morren of Grand Rapids, Michigan in memory of their daughter Patti, who was mentally impaired and passed away at the age of twenty-nine. The Morrens greatly appreciated the amount of love and compassion that was shown to Patti by her special education teachers. They want to assist a student who is qualified to work with children with disabilities. They also set up this scholarship to allow a student to experience college life, something their daughter Patti could never do. In 2002-03, three scholarships of \$1,500 each were awarded. Students who are awarded this scholarship and who are enrolled in the combined Grand Valley-Calvin program should note that the amount may be reduced to correspond with the tuition reduction incurred by taking courses at Grand Valley.

Kenneth and Katherine Olthoff Family Scholarship Mr. and Mrs. Olthoff have been very impressed and gratified with the accomplishments that specially trained elementary

school and secondary school teachers have had with children coping with learning differences. Consequently, they would like to encourage and assist Calvin students who are interested in special education, whether they intend to teach in a Christian school environment or a public school. In either case, it is their belief that the Christian commitment and love instilled in future teachers at Calvin will be evident in the special manner in which children with special needs are taught and encouraged to reach their full potential. Candidates for this scholarship must be current students entering the junior or senior year pursuing a program in special education (MI); have a cumulative grade point average of 3.0 or higher; and be highly motivated and deeply committed to the field of special education (MI) as demonstrated by class work and extracurricular activities. If all of these criteria are met, preference may be given to those with financial need. Two scholarships in the amount of \$1,600 each were awarded for 2002-03. Students who are awarded this scholarship and who are enrolled in the combined Grand Valley-Calvin program should note that the amount may be reduced to correspond with the tuition reduction incurred by taking courses at Grand Valley.

Pauline Roskam Memorial Scholarship This scholarship was established by Mr. Donald Roskam in honor of the memory of his late wife Pauline, who was a loving, compassionate mother and an inspiration to all who knew her. Candidates for this scholarship must be entering their junior or senior year at Calvin; pursuing a program in education, including special education, and planning to teach at the elementary or secondary level; have a cumulative grade point average at Calvin of 3.3 or higher; and possess Christian character and concern for others as demonstrated by active involvement in volunteer activities in prior years. Financial need as defined for government programs is not required, but there should be evidence that the scholarship is needed to help meet educational expenses. Two scholarships of \$1,350 each were awarded for 2002-03.

Schneider Education Scholarship Mr. Lee and Mrs. Catherine (Kay) Schneider have established this scholarship to provide assistance to worthy students who are pursuing a

career in education. Both Lee and Kay Schneider graduated from Calvin. Lee taught for 34 years in Christian schools while Kay taught in public and Christian schools for many years. The scholarship is also established to honor Catherine's mother, Agnes Folkema Wybenga, who attended Calvin's Preparatory Program from 1907 - 1909 and taught Christian schools in the early 1900's. Candidates must be entering the junior or senior year, have a minimum GPA of 3.0 or higher and be pursuing a career in K-12 education. Preference will be given to students interested in teaching in Christian schools although other candidates may be considered.

Schultze-Weemhoff Family Christian Education Scholarship This scholarship was established because of a longstanding family tradition of supporting and believing in the importance of Christian Education. This scholarship is intended for a junior or senior in the Education Department who intends to teach in a Christian school. Candidates must have cumulative grade point average of 3.0 or better to be considered.

Marion and Nella Snapper Family Scholarship Even though Marion Snapper is probably best known for his teaching at the Calvin Seminary, he was, prior to this, a professor in the Education Department of Calvin. As one of his former students wrote, 'I know that in all fields of education his work will live on as we cherish his memory and his teaching. I thank God for his Christian teaching at Calvin.' Because Nella Snapper is a Calvin graduate and has taught in Christian and public schools for many years, she and her children established this scholarship to help worthy students pursuing careers in education. Candidates should be pursuing elementary or secondary teaching and have a grade point average of 3.0 or higher. One scholarship of \$1,000 was awarded in 2002-03.

Angeline Nydam Spoelhof Memorial Scholarship Former President of Calvin, Dr. William Spoelhof, and the extended Spoelhof family and friends of Mrs. Spoelhof, have established a scholarship to honor her for her supportive contributions as the wife of the college president during the transitional period of Calvin's relocation and rapid development. In recognition of her career as a Christian schoolteacher and her work in church, col-

lege, and community causes, the scholarship is to be awarded to an education student entering the junior or senior year. Candidates must have a grade point average of 3.3 or higher, be actively involved in volunteer activities, and show some evidence of financial need. Three scholarships of \$1,500 each were awarded for the 2002-03 academic year.

Fred and Carol Vanden Bosch Scholarship

This scholarship, established by Mr. and Mrs. Fred Vanden Bosch, is provided to assist experienced Christian teachers in returning to full or part-time education in the Master of Education Learning Disabilities (LD) program at Calvin. To be eligible for the scholarship, a student must be a professing Christian teacher, must be committed to continuing in this profession, and must be enrolled for graduate credit in a minimum of two courses per semester. The recipient will be required to assist in laboratory components of the M. Ed.-LD courses, must demonstrate potential for advanced academic scholarship, and demonstrate financial need based on criteria for financial aid. Typically, \$5,800 or more is available each year, with individual amounts depending on the number of qualified candidates and the students' enrollment statuses.

Vander Ark Family Scholarship The Vander Ark family, known as 'the teaching family,' has funded a scholarship that is available to students who will be juniors or seniors in the teacher education program at Calvin. Candidates for this scholarship must have a cumulative grade point average of 2.75 or higher and exhibit sound moral character, a strong commitment to Christian teaching, and a promise of expanding maturity. There should be some evidence of financial need. Preference will be given to relatives of the Vander Ark family when they identify themselves on the application form. Normally, two to five scholarships are awarded in the amounts of \$1,000 to \$1,500 each.

Vander Haagen Family Scholarship for 5th Year Education Students Jane and David Vander Haagen have established this scholarship to support students striving to become teachers. The Vander Haagens believe that Calvin-educated teachers contribute greatly to the lives of their students, the quality of their schools, and the character of their communities. The Vander Haagens thankfully

provide this scholarship to encourage students who are completing their academic preparation for this most important Kingdom endeavor. Candidates should be entering their fifth or sixth years or returning as post-baccalaureate students pursuing teacher certification and should have grade point averages of 3.0 or higher. One scholarship of \$1,500 was awarded in 2002-03.

Janet D. Van Dyke Education Scholarship

This scholarship was established by Mrs. Janet D. Van Dyke, a Calvin alumna who taught elementary education for 35 years in the Grand Rapids Public Schools after her graduation from Calvin. Candidates for this scholarship should have at least a cumulative grade point average of 3.0 on a 4.0 scale, be current Calvin students entering the junior or senior year, and be pursuing a program in elementary education. Financial need as defined for government programs is not required, but there should be some evidence that the scholarship is needed to help meet educational expenses. Five scholarships of \$1,450 each were awarded for 2002-03.

Van Til Family Special Education Scholarship

The Sam and Judy Van Til Family established this scholarship in honor of their daughter and sister Jana who has Down syndrome. The family has recognized the important role Jana's teachers have played in her life and would like to support students who are called to be special education teachers. Candidates must be entering the junior year, have a grade point average of 3.3 or higher, and be pursuing degree in Special Education.

George J. Van Wesep Memorial Scholarship

Each year Mr. and Mrs. Richard De Vos of Ada, Michigan provide Calvin with a gift of \$10,000 to be used for scholarships. The gift is given in recognition of Mrs. De Vos's father, Mr. George J. Van Wesep, who was a teacher/administrator in the public and Christian schools for more than fifty years. Because of Mr. Van Wesep's commitment to education, and to Christian education in particular, the scholarships are awarded to students planning to pursue education as a career. Scholarships are awarded primarily on the basis of the students' academic records and potential for Christian service in education. Candidates must be juniors and seniors who have been

accepted into the teacher education program. Financial need is considered as a secondary factor. Five scholarships of \$2,000 each are awarded annually.

Lois R. (Post) and Nelson L. Veltman Education Scholarship This scholarship, established by the children of Lois R. (Post) and Nelson L. Veltman, honors their mother Lois's many years of teaching. She was a teacher in both elementary and secondary education, as well as in catechism and women's Bible study groups in the churches where her husband Nelson pastored throughout the United States. Candidates for this scholarship must be entering their junior or senior year at Calvin; have a high enough grade point average to be admitted to the Teacher Education Program at Calvin (2.5 on a 4.0 scale); be pursuing a program for teaching at the junior high or middle school level; possess Christian character and concern for others as demonstrated by active involvement in volunteer activities in prior years; and qualify themselves on the basis of financial need. One scholarship of \$1,000 was awarded for 2002-03.

Engineering Department

A.M.D.G. Scholarship A.M.D.G. Architects, Inc. of Grand Rapids, Michigan established this scholarship in an attempt to assist a promising student in the field of architecture. More specifically, this scholarship is an attempt to continue the diversification of both Calvin and the architecture field. The goal of this scholarship is to encourage women and minorities to consider architecture as a profession. In light of this goal, preference for this scholarship will be given to ethnic minority or international students, women and/or other than Christian Reformed Church members. Candidates will be sophomores, juniors, or seniors pursuing a pre-architecture program. One scholarship of \$1,500 was awarded in 2002-03.

James Bosscher Engineering Scholarship Former students and friends of Dr. Bosscher have generously funded a scholarship in his name. Scholarships will be awarded to incoming freshman engineering students who demonstrate outstanding academic achievement and potential. The number of awards and the value of each award will be determined by the amount of money available

each year. The award for the first year is contingent on enrollment in a typical engineering program at Calvin. Scholarships are renewable for the sophomore year in the engineering program based on the first year's college performance, including the achievement of at least a 3.0 grade point average. Special consideration will be given to North American ethnic minority students. To be considered for the Bosscher Scholarship, students need only apply for admission to the college by February 1. They must also indicate engineering as their primary interest.

Calvin Engineering Scholarship The Kamstra family has established this scholarship in honor of the late Gordon Kamstra. Candidates should be entering the junior year as full-time students in the B.S.E. program in Engineering. A cumulative grade point average of 3.0 or higher is expected and a full year of prior study at Calvin is required.

Calvin Junior Engineering Scholarship This scholarship was established by the Calvin Engineering Advisory Council to assist full-time engineering students entering the junior year of the B.S.E. program. A cumulative grade point average of 3.0 or higher is expected and a full year of prior study at Calvin is required. The candidate must show a high level of personal integrity and leadership.

Joseph and Deanne Daverman Family Scholarship Joseph and Deanne Daverman have been lifetime supporters of Christian education. Joe, three daughters, and eight grandchildren all attended Calvin. In other ways, Joe and Deanne have strongly supported Calvin throughout their lives. As a member of the Long-Range Planning Committee, Joe was part of the decision that moved Calvin to the Knollcrest campus. As an architect, Joe also participated in the design of several buildings on campus. In 1974, Joe was presented with the Distinguished Alumni Award. The establishment of this scholarship is an attempt to help others achieve the same Christ-centered college education that has played such an important role in the life of the Daverman family. One or more scholarships are awarded to pre-architecture or engineering students with a grade point average of 3.0 or higher and financial need who are entering their junior or senior year.

Brian L. DeWall Memorial Scholarship Mr. Gordon and Mrs. Joan DeWall of Fruitport, Michigan have established this scholarship in memory of their son Brian, who was tragically killed in an automobile accident during his senior year at Calvin. Scholarships are awarded to students who are entering the senior year in the Mechanical Engineering Program at Calvin; live life with a positive attitude and a good sense of humor; demonstrate Christian character; and demonstrate the potential to make a positive impact in their work both professionally and as a Christian. A grade point average of 2.8 or higher is required.

Elenbaas Family Engineering Scholarship Mr. Jack and Mrs. Eleanor Elenbaas have established this scholarship to support students at Calvin. A number of Elenbaas family members are engineers and it is their desire that the scholarship be awarded to one or more engineering students. Candidates need to be entering the junior or senior year, have a grade point average of 3.2 or higher, and be pursuing a degree in engineering.

Elenbaas Family Honors Scholarship Each year an engineering student who is receiving an Honors Scholarship will be designated as the Elenbaas Family Honors Scholar. Mr. Jack and Mrs. Eleanor Elenbaas have established this scholarship to support students at Calvin. A number of Elenbaas family members are engineers and it is their desire that the scholarship be awarded to one or more engineering students. No separate application is required.

Robert J. Reimink/Prein and Newhof Scholarship This scholarship is established by the engineering firm of Prein and Newhof of Grand Rapids, Michigan as a memorial to Robert J. Reimink, a Calvin alumnus and a key engineer at the firm, who died of cancer in 1994 at the age of 38. Candidates for the scholarship are current Calvin students pursuing a program in Civil Engineering, entering the junior or senior year, and having a cumulative grade point average of 3.0 or higher. Special consideration will be given to candidates who are employees or direct descendants of present, retired, or deceased employees of Prein and Newhof and who make note of this on their application form.

English Department

Winifred Holkeboer Memorial Scholarship This scholarship was established as a tribute to Winifred Holkeboer, who, through her many years of service to the English Department and Calvin, engaged students in the study of language and literature. This scholarship will be given annually to an English major who demonstrates academic excellence, commitment to the major, and potential for leadership within the major. Selection is based on academic record, participation in the activities of the department, and a brief statement of the applicant's reasons for choosing English as a major. Candidates should be entering the junior or senior years and have a grade point average of 3.0 or higher. One scholarship of \$1,600 was awarded in 2002-03.

Kenneth and Lillian Kuiper Scholarship To honor the many years of service and commitment to Christian education that Dr. Kenneth Kuiper and his wife Lillian have given so generously, their family and friends have established a scholarship in their name. Dr. Kuiper taught in the English Department at South Christian High School in Grand Rapids and then served with distinction in the English Department at Calvin for 37 years, encouraging students and mentoring faculty. Lillian taught for seven years in grades three through twelve and later ran the student teacher placement program in the Calvin Education Department for ten years. All five of their children have graduated from Calvin. Their son George, a dedicated employee of the college, took the lead role in initiating this project to honor his parents. In recognition of the Kuipers' high regard for the classroom teacher, this scholarship will be awarded annually to encourage students in the English Department who are pursuing a teaching career in junior/senior high school English. In 2002-03, one \$3,200 scholarship was awarded.

Dr. Charlotte Otten Scholarship This scholarship reflects Charlotte F. Otten's interests in writing and research during her teaching years at Calvin. A scholarship of \$1,500, open to a junior or senior English major who shows promise as a writer of poetry, fiction, or non-fiction, is designed to encourage writers to consider a career in writing. This scholarship is also open to a junior or senior English major who is considering a career in Renaissance

studies, women's studies, or children's literature. Selection is based on writing samples, academic record (3.0 grade point average or higher), and a statement of the applicant's career goals.

Schemper-Kamp Family Scholarship This scholarship is established as a tribute to Calvin professor John J. Timmerman and his wife, Mrs. Carolyn Hager Timmerman, both of who had a profound impact on the lives of the donors, Mr. Henry and Mrs. Carol Kamp. The Kamps established this scholarship out of gratitude for what the Timmermans have done for them and in recognition of what Dr. and Mrs. Timmerman have done for Calvin and many of its students. The scholarship is awarded annually by the English Department to a returning junior or senior English major who has demonstrated academic excellence and a Christian perspective in his or her writing. One \$2,000 scholarship was awarded in 2002-03.

Henrietta Ten Harmse English Scholarship Henrietta Ten Harmse has established this scholarship for promising English majors. Dr. Ten Harmse served the English Department for 27 years, both as a beloved teacher and as departmental chair. She awards an English major because English is a crucial element of the liberal arts education, because it prepares students for a wide range of professions, and because it enables them to verbalize their Christian faith in an articulate, forceful, and humane way. Recipients of this scholarship must be enthusiastic readers and writers and must be able to explain how their Christian faith informs their study of literature. One scholarship of \$2,000 was awarded in 2002-03.

Richard R. and Kathleen J. Tiemersma Scholarship This scholarship has been established to promote and further respect for language, the liberal arts, and Calvin and its objectives. Dr. Tiemersma has set up this scholarship in gratitude to Calvin for opportunities he and Kay received to learn from gifted professors, for the joy of working in a satisfying profession, and for deep enrichment of their personal lives. Dr. Tiemersma taught in the English Department for 28 years where he was a respected and beloved professor whose specialty was Victorian literature and a careful attention to use of the English language. Mrs. Tiemersma was an English major and taught in the department

for several years. Candidates should be entering the senior year and have a grade point average of 3.3 or higher. One scholarship of \$1,900 was awarded in 2002-03.

Steve J. and Viola Van Der Weele Scholarship The family of Steve Van Der Weele, who taught at Calvin from 1950 to 1986, has provided for two scholarships of \$2,100 each to be given annually to a returning junior or senior English major who shows evidence of coming to maturity through a liberal arts education and of enriching the Christian community through those studies. Academic excellence and Christian character are the primary criteria; need may be considered as a secondary criterion. The English Department will designate the recipient of the award.

Germanic Languages Department

Wallace and Marianne Bratt German Interim Abroad Scholarship For nearly thirty years it has been the repeated, grateful witness of both graduates and current students that the German Interim Abroad was one of the most significant educational experiences they had while at Calvin. Recognizing the educational value of the interim, the German department has worked hard to keep the German Interim Abroad affordable for all students. In recent years, however, as the cost of a Calvin education has steadily risen, a significant number of students who would otherwise qualify for participation in the German Interim Abroad have nonetheless been unable to do so for financial reasons. This scholarship has been instituted to help make it possible for worthy students with promise, seriousness of purpose, and demonstrated need to participate in future German Interim Abroad sessions in Germany. Applications are available from the Department of Germanic Languages and Literatures.

Health, Physical Education, Recreation, Dance, and Sport Department

Huddleston Family Exercise Science Scholarship Mr. and Mrs. Ken and Kay Huddleston of Ripon, Wisconsin and their daughter Cheryl have established this scholarship in appreciation for the excellent education Cheryl received at Calvin that prepared her for graduate school and a career in Cardiac Rehabilitation. Candidates for the scholarship must be in the junior or senior year at Calvin, majoring in Exercise

Science, have completed a minimum of four courses in the major with a grade point average of 3.3 or higher, and planning to pursue graduate studies in Exercise Science. Candidates should contact the faculty advisor for Exercise Science to initiate the application process. A \$600 stipend is awarded to support a 8-10 hours/week practicum placement with a local rehabilitation agency.

Dr. Barney Steen Scholarship for Physical Education Through the generosity of Gerrit and Agnes Hennink, as well as other friends and former athletes of Barney Steen and the college, this scholarship honors Dr. Barney Steen for his many contributions to the Physical Education and Recreation Department and Calvin while serving as department chair, athletic director, professor, and coach. Scholarships are awarded to students entering the senior year at Calvin who are pursuing a major or minor in physical education. Selection is based on leadership ability, ethical character, academic achievement, ability to articulate a Christian perspective, and service vision. Two scholarships of \$1,950 each are awarded annually.

History Department

John De Bie History Scholarship This scholarship was established by the family of John De Bie, former professor of history at Calvin, to honor God in gratitude for his full life as a history teacher. He also dreamed of being able to financially encourage individuals who plan to dedicate their lives to teaching history. Candidates must be entering the junior year, be pursuing a career in education with a History major, and must have a grade point average of 2.75 or better.

Peter D. Hoekstra Scholarship This scholarship, established by the History Department in honor of one of its founding members, is made possible by gifts received from Dr. Robert G. and Mrs. Kathryn (Schuringa) Andree. The scholarship is awarded to a first-year student entering Calvin with the intent of majoring in History. The recipient will have demonstrated interest and accomplishments in history as manifested in his or her high school record and additional projects or independent study. In 2002-03, two scholarships of \$1,950 each were awarded. Apply through the History Department.

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 to a junior history major. Two \$2,000 scholarships were awarded for 2002-03

Mathematics and Statistics Department

Kenneth E. and Jean Baker Mathematics Scholarship Dr. Kenneth and Mrs. Jean Baker always had a strong interest in Christian education at all levels. This scholarship was established to encourage and honor Calvin students studying mathematics, a field that one of their daughters pursued. Candidates must be entering the first-year at Calvin and be pursuing a degree in mathematics as their primary field of study. In addition, candidates must submit a one-page essay detailing their reasons for pursuing a mathematics major, and providing evidence of an excellent, scholastic record in mathematics and involvement in mathematics activities.

Paul J. and Eleanor I. Zwier Family Scholarships These scholarships, which are funded by the Zwier family, by colleagues, and by alumni, are intended to celebrate the many delightful opportunities that Professor Zwier had in teaching mathematics to Calvin students during his long career at Calvin. Dr. and Mrs. Zwier have appreciated being a part of the Calvin community. In addition, all of their children have attended Calvin. Reflecting these interests, there will initially be two upper-class renewable scholarships. The scholarships are intended for students who are committed to major in mathematics at Calvin, have an interest in teaching mathematics at the high school or college level, and who may be in need of financial assistance in order to accomplish these goals. Candidates should be entering the junior year with a grade point average of 3.0 or higher. One scholarship of \$2,500 was awarded in 2002-03.

Meeter Center

Hugh and Eve Meeter Calvinism Award Mr. Hugh and Mrs. Eve Meeter established these awards to stimulate interest in and knowledge of the Calvinistic world and life view among high school seniors planning to attend a

Christian Reformed-related college. In 2002-03, one scholarship of \$2,500 and one scholarship of \$1,250 were awarded. Selection is based on the evaluation of an 8-12 page research paper required for consideration. Applications should be obtained from the Meeter Center at Calvin.

Music Department

Janice Broekhuizen Music Scholarship This scholarship is in honor of Janice Broekhuizen, an alumna of Calvin, who graduated with a degree in Elementary Education and was active in music ensembles during her years at Calvin. This scholarship has been established by the family and friends of Mrs. Broekhuizen out of love and respect for her memory. Two scholarships are awarded to full-time students entering the junior or senior year with a grade point average of 3.1 or higher and who have demonstrated superior achievements in Calvin's music activities. Students are required to participate in the Calvin Orchestra and to take private lessons for credit in the medium for which the scholarship is granted during the year the scholarship is used (except for music education students during student teaching).

Henry Bruinsma Family Scholarship This scholarship is in honor of Anna Bruinsma, wife of Henry J. Bruinsma, graduate of one of the first classes at Calvin and a lover of music in all its forms, and in honor of Henry A. Bruinsma, son of Henry J. and Anna. Dr. Henry A. Bruinsma was a professor of music at Calvin who was known for his research and leadership in music and the humanities. The scholarship has been established by Grace Hekman Bruinsma, wife of Henry A. Bruinsma and Dean of Women at Calvin from 1944-47. One award is given to a full-time student who is a music major entering the senior year at Calvin. The award is based on overall contributions to the music program at Calvin. Grade point average will also be considered, but not given priority.

Llewellyn L. Cayvan String Instrument Scholarship Mr. and Mrs. Leo L. Cayvan were long-time supporters of the Calvin Music Department. As part of their estate planning, they arranged to fund music scholarships for students who excel in playing the violin, viola, or cello. Up to four scholarships are awarded

each year to violin, viola, or cello players that perform with the Calvin Orchestra and are taking private lessons.

DeVries Church Music Scholarship Interest from this fund provides one scholarship to an outstanding student who has an interest in and aptitude for a career in church music. The award is for students entering the sophomore, junior, and senior years at Calvin who have attended Calvin at least one year. Applicants will be judged by the following criteria: proficiency in performance as a singer or keyboardist, participation in an appropriate faculty-directed ensemble or accompanying, and grade point average (minimum of 2.5 in music). Students are required to participate in an appropriate faculty-directed ensemble and to take private lessons for credit in the medium for which the scholarship is granted during the year the scholarship is used (except for music education students during student teaching).

Harold and Gladys Geerdes String Scholarship Contributions have been received for the establishment of a string award. Interest on this amount will provide an award to an outstanding string player entering the sophomore, junior or senior year at Calvin. The recipient should have attended Calvin at least one year, although consideration may also be given to outstanding first-year students. Applicants shall be judged on the basis of proficiency in performance as a string player, participation in the Calvin Orchestra, and grade point average (minimum of 2.5 in music). Consideration will also be given to those active in a chamber music ensemble. Students are required to participate in the Calvin Orchestra and to take private lessons for credit in the medium for which the scholarship is granted during the year the scholarship is used (except for music education students during student teaching.)

Harold Geerdes Violin Scholarship Contributions have been received by the Music Department in honor of Harold Geerdes, former conductor of the Calvin Orchestra, the Oratorio Society, and professor of music. Interest from this fund provides annual awards to outstanding violin students entering the sophomore, junior or senior year at Calvin who have attended Calvin at least one year. Applicants will be judged on the basis of pro-

iciency in performance as a violinist, participation in the Calvin Orchestra, and grade point average (minimum of 2.5 in music). Students are required to participate in the Calvin Orchestra and to take private lessons for credit in the medium for which the scholarship is granted during the year the scholarship is used (except for music education students during student teaching).

Helene Hekman Gezon Voice Scholarship Contributions have been received by the Music Department in memory of Mrs. Gezon, a prominent contralto soloist with the Calvin Oratorio Society. Interest from this fund provides annual awards to outstanding voice students entering the sophomore, junior or senior year at Calvin who have attended Calvin at least one year. Applicants shall be judged on the basis of proficiency in performance as a singer, participation in an appropriate faculty-directed choir, and grade point average (minimum of 2.5 in music). Students are required to participate in a faculty-directed choir and to take private lessons for credit in the medium for which the scholarship is granted during the year the scholarship is used (except for music education students during student teaching).

Allene Huizenga Goguen Music Education Scholarship The family of Allene Huizenga Goguen established this scholarship to honor her life and career in urban music education. The scholarship is an award to students who have demonstrated through course work or extracurricular activity an interest in urban music education. Applicants must be entering their final year in the Bachelor of Music Education program, have a cumulative grade point average of at least 3.0, and exhibit the musical skill and leadership qualities needed for music education.

John E. and June B. Hamersma Organ Scholarship For the purpose of encouraging the serious study of the organ and its literature, an award is offered to an entering first-year student with a high school grade point average of 3.5 or better who wishes to major in organ or in church music with an emphasis in organ. The applicant is expected to audition by means of performance on a keyboard instrument, preferably in person, though tape is permissible. The student is required to take private organ lessons for credit during the year the scholarship is used. The

scholarship is renewable for the sophomore year if a Calvin grade point average of 3.2 or better is achieved and approval to major in organ or church music has been granted by the Music Department.

Henry and Nellie Holtvluwer Music Scholarship Contributions have been received from J. Henry and Leone Holtvluwer in memory of Henry Holtvluwer, first chairman of the board of the Calvin Oratorio Society. Interest from this fund provides an annual award to a music major entering the junior year at Calvin who has attended Calvin at least one year and has the highest overall grade point average.

Marge Houskamp Organ Scholarship Three annual awards are given by Mr. Robert W. Houskamp in memory of Margaret A. Houskamp to outstanding first-year organ students who intend to become church organists. Recipients are required to take private organ lessons for credit during the year the scholarship is used. The award is also open to students from other classes, although preference will be given to entering students.

Kuipers Family Scholarship for the Calvin College Band Mr. Lawrence and Mrs. Nancy Kuipers have established this scholarship to encourage the non-music major to contribute his or her talents to the Calvin Band. All four of the Kuipers' children played in the Calvin Band as non-music majors. The scholarship is available to any full-time junior or senior who is a non-music major and who will be playing in the Calvin Band. Candidates should be entering the junior or senior year, have a grade point average of 2.5 or higher, and be pursuing a degree other than music.

Arnold Christopher Minderhout Memorial Scholarship An annual award is given by Mrs. Marion Minderhout to an outstanding organ student who is a returning sophomore, junior, or senior at Calvin. Applicants must be pursuing a program in church organ music, have a cumulative grade point average of 3.0 or higher, demonstrate some financial need, and give evidence of volunteer activities outside the classroom. Recipients are required to take private organ lessons for credit during the year the scholarship is used.

Music Department Applied Music Scholarship Several awards are presented by the Calvin Music Department to prospective first-

year students. These awards are given to instrumentalists and vocalists who have records of superior achievements in high school music activities and who give evidence of outstanding talent and musicianship in audition. Students are required to participate in an appropriate faculty-directed ensemble, and to take private lessons for credit in the medium for which the scholarship is granted.

Norman and Anne Noordeloos Keyboard Scholarship Contributions have been received by the Music Department in memory of Norman and Anne Noordeloos, relatives of students active in Calvin's music program. Interest from this fund provides annual awards to outstanding musicians entering the sophomore, junior or senior year at Calvin who have attended Calvin at least one year. Applicants will be judged on the basis of proficiency in performance, participation in an appropriate faculty-directed ensemble or accompanying, and grade point average (minimum 2.5 in music). Recipients are required to take private keyboard lessons for credit during the year the scholarship is used (except for music education students during student teaching).

Oratorio Society Applied Music Scholarship Several awards are presented by the Calvin Oratorio Society to prospective first-year students. These awards are given to vocalists and string players who have records of superior achievement in high school music activities and who give evidence of outstanding talent and musicianship in audition. Vocal recipients are required to participate in the Oratorio Chorus and another faculty-directed credit ensemble. String players are required to participate in the Calvin Orchestra. All recipients are required to take private lessons for credit in the medium for which the scholarship is granted during the year the scholarship is used.

Rainbow Foundation Wind Scholarship An annual award is given by Thomas and Marjorie Hoogeboom through the Rainbow Foundation of Kalamazoo, Michigan to an outstanding performer on a wind instrument entering the sophomore, junior or senior year at Calvin who has attended Calvin at least one year. Applicants will be judged by the following criteria: proficiency in performance, participation in an appropriate faculty-directed

ensemble, and grade point average (minimum of 3.0 in music). Students are required to participate in an appropriate faculty-directed ensemble and to take private lessons for credit in the medium for which the scholarship is granted during the year the scholarship is used (except for music education students during student teaching).

John Scripps Wind Scholarship An annual award is given by John Scripps to an outstanding performer on a wind instrument entering the sophomore, junior or senior year at Calvin who has attended Calvin at least one year. Applicants will be judged by the following criteria: proficiency in performance, participation in an appropriate faculty-directed ensemble, and grade point average (minimum 2.5 in music). Students are required to participate in an appropriate faculty-directed ensemble and to take private lessons for credit in the medium for which the scholarship is granted during the year the scholarship is used (except for music education students during student teaching).

Seymour Swets Voice Scholarship Contributions have been received by the Music Department in memory of Seymour Swets, the founder of Calvin's Music Department. Interest from this fund provides annual awards to outstanding voice students entering the sophomore, junior or senior year at Calvin who have attended Calvin at least one year. Applicants will be judged on the basis of proficiency in performance, participation in an appropriate faculty-directed choir, and grade point average (minimum 2.5 in music). Students are required to participate in an appropriate faculty-directed choir and to take private lessons for credit in voice during the year the scholarship is used (except for music education students during student teaching).

John R. and Marie A. Swierenga Brass Scholarship This scholarship has been established to honor the memory of John R. and Marie A. Swierenga. Mr. and Mrs. Swierenga had six children, all of whom attended Calvin and were active in various choral and/or instrumental groups. Mr. Swierenga played a brass instrument and all six children played brass instruments in the Calvin band. This award is given to a student with financial need and a grade point average of 3.0 or higher who plays a brass instrument.

John and Doris Van Dellen Music Scholarship Contributions have been received by the music department from John and Doris Van Dellen, brother and sister, who have long had an interest in vocal music and in Calvin's music program. This scholarship is awarded to a student musician entering the sophomore, junior, or senior year at Calvin who has attended Calvin at least one year. Applicants will be judged on the basis of proficiency in performance, participation in an appropriate faculty-directed ensemble or accompanying, and grade point average (minimum of 2.5). First consideration will be given to students who are outstanding in vocal music. Recipients are required to participate in an appropriate faculty-directed ensemble and to take private lessons for credit in the medium for which the scholarship is used (except for music education students during student teaching).

Vander Haagen Family Scholarship for Church Musicians Three annual awards are given by David and Jane Vander Haagen of Lansing, Michigan to outstanding students who are pursuing or planning to pursue a program in church music, either general, organ, or choral. The awards are for current Calvin students entering the junior or senior years. Applicants will be judged by the following criteria: proficiency in performance as a singer or keyboardist, a cumulative grade point average of 2.7, and some demonstrated financial need. Students are required to participate in an appropriate faculty-directed ensemble or accompanying and to take private lessons for credit in the medium for which the scholarship is granted during the year in which the scholarship is used.

Vander Heide Voice Scholarship Awards are offered by the Jan and Anne Vander Heide family to vocalists who have a record of superior achievement in high school music activities. Students are required to participate in an appropriate faculty-directed choir and to take private lessons for credit in voice during the year in which the scholarship is used. Applicants will be judged on the basis of evidence of talent and musicianship.

Judith Vroon Vander Zee Music Education Scholarship In memory of Judith Vroon Vander Zee, her family and friends have established this scholarship to keep alive her musical excellence and service to God and

others. She was an extremely gifted vocalist, pianist, and teacher who used her gifts always to the glory of God. Her 18-year battle with multiple sclerosis made it impossible for her to use her gifts of music as much as she would have liked during her illness, but she continued to be a guiding light of encouragement to others. This scholarship is awarded to a music education major entering the junior or senior year. Candidates must have a grade point average of 3.0 or higher, financial need, and a strong Christian commitment.

Lloyd and Arlene Warners Keyboard Scholarship Scholarships are annually awarded to keyboardists who have a record of superior achievement in high school music activities. Applicants will be judged on the evidence of talent and musicianship. Recipients are required to take private lessons in the medium for which the scholarship is granted and participate in a faculty-directed ensemble or accompanying.

John W. Worst Music Scholarship Dr. Myra J. Kraker, Professor of Education, established this scholarship in honor of her husband, Dr. John W. Worst, emeritus Professor of Music. The scholarship seeks to recognize his many contributions to the Music Department in particular and to Calvin in general. In addition, this scholarship seeks to provide assistance to students pursuing a career in music. Candidates may be entering any year of study at Calvin, have a minimum GPA of 2.50 or higher and be interested in the art of music making, either in performance, composition, musicology, or theory. Preference will be given to those intending to pursue a career in opera, music theater, or who are active in such endeavors at Calvin. Recipients should remain active in the music department.

Ruth Ann Worst Memorial Music Scholarship Longtime music professor John Worst and his family have established this scholarship to honor Ruth Ann Worst, beloved wife, mother, and grandmother, for her love of music and her life of singing. Music majors with a grade point average of 3.0 or higher are eligible to apply for this scholarship. Priority is given to music composition students entering their junior or senior years. Recipients are required to enroll in a music composition course during the year they receive the award.

Johanna Kempers Wyngaarden Scholarship In gratitude to God for His blessings over the years, Dr. James B. Wyngaarden of Durham, North Carolina established this scholarship to honor his mother, Mrs. Johanna Kempers Wyngaarden. The purpose of this scholarship is to strengthen Christian education in music and fine arts for worthy students. First preference will be given to a music major concentrating in piano performance. Second preference will be given to a music major not concentrating in piano performance but who takes two semester hours of private piano lessons per semester. Third preference will be given to a non-music major who takes two semester hours of private piano lessons per semester.

John and Betty Zandee Organ Music Scholarship Contributions have been received by the Music Department in memory of John and Betty Zandee through the generosity of Mr. and Mrs. Everett Hassing of Kalamazoo, Michigan, longtime supporters of Calvin and its music department. Interest from this fund provides an annual award to an organ student entering the sophomore, junior, or senior year. Applicants will be judged by the following criteria: proficiency in performance, participation as a chapel organist or choir accompanist, a cumulative grade point average of 2.7 or higher, and some demonstrated financial need. Students are required to take private organ lessons for credit during the year in which the scholarship is used.

Gerald and Adriana Zylstra Piano Scholarship The Music Department has received contributions from the estate of Gerald S. and Adriana M. Zylstra for the establishment of a piano Scholarship. Mrs. Zylstra taught piano for over 40 years and was the first piano teacher for many children. Interest from this fund provides an award to an outstanding piano student entering his or her freshman year at Calvin. Applicants will be judged on the basis of proficiency in performance and record of high school achievement. The scholarship is renewable for three years if the recipient maintains a grade point average of 2.5 and continues to take piano lessons for credit.

Nursing Department

Leah Berends Nursing Scholarship This scholarship has been established by the

Berends family of Grand Rapids, Michigan in memory of Leah Berends, who with a gentle spirit and servant heart dedicated her life and nursing career to helping those who were hurting physically and emotionally. Leah's family is also grateful to the nurses and medical professionals who surrounded them with compassion during her last days of life on earth. The Berends family hopes to encourage nursing students to embrace the words of Galatians 6:2, 'Carry each other's burdens and in so doing you will fulfill the law of Christ.' The \$2,500 scholarship is awarded to junior or senior nursing students who are full-time students in the nursing program. Preference will be given to those who demonstrate a compassionate spirit and servant heart.

Kate Borgman Nursing Scholarship Fund A fund was established by Mr. and Mrs. Fred Borgman of Grand Rapids, Michigan to establish a scholarship fund in memory of their mother, Mrs. Kate Borgman, who dedicated her life to the nursing profession. The scholarship is derived from the income of the fund. The scholarship recipient should be a nursing student in their junior or senior year having a grade point average of 2.5 or higher and should demonstrate industry, motivation, and worthiness to be successful in the Nursing Program and to contribute to society through the nursing profession. Two scholarships of \$2,200 each were awarded for 2002-03.

Thedford P. and Ruth I. Dirkse Scholarship The children of Thedford and Ruth Dirkse have established this scholarship to honor their parents' long association with Calvin. Dr. Dirkse taught Chemistry to students in the nursing program and Ruth Imanse Dirkse was Manager of the Bookstore and active in the Alumni Association. Candidates for this scholarship must be entering the junior or senior year, be pursuing a program in Nursing, and have a grade point average of 3.3 or higher. One scholarship of \$2,400 was awarded for 2002-03.

Bryan Dykstra Nursing Scholarship The family and friends of the late Bryan Dykstra from Rochester, New York have contributed funds to be used for scholarships in Bryan's memory. Bryan was a student at Calvin in 1982-1983 before he contracted leukemia and passed away in the fall of 1983. The scholarship will be awarded to a junior or senior who is pur-

Victor VerMeulen Medical Scholarship Gifts have been received from Mrs. Mildred VerMeulen of Grand Rapids, Michigan to fund a scholarship in honor of her husband, Victor R. VerMeulen, Sr. For 2002-03, eleven awards were made to students entering the junior or senior year, five in the nursing program and six in the pre-medical program. Selection is based primarily on the student's academic record and potential for Christian service in medicine. Financial need is considered as a secondary factor. To apply for the pre-medical scholarships, use the Upper-class Named Scholarship Application available from the Office of Scholarships and Financial Aid in January.

Ruth Zylstra Memorial Scholarship Each year Calvin awards one scholarship of \$500 or more to a student in the nursing program who is entering the junior or senior year at Calvin. Selection is made on the basis of the student's academic record, potential, character, and financial need.

Off-Campus Programs

Kate Bytwerk Scholarship for Study Abroad This scholarship was established in memory of Katherine Bytwerk, daughter of Communications Arts and Sciences Professor Randall and Sharon Bytwerk, who died at age twelve while hiking in the mountains during the 1996 Calvin Semester in Hungary program. Because of her delight in the opportunity to travel and learn through this international program, her family and friends have set up this scholarship to assist Calvin students in enjoying the benefits of studying abroad. Recipients must be at the junior or senior class level at the time the scholarship is used and must be participants in a Calvin semester abroad program. A minimum grade point average of 2.5 is required. Application for the scholarship may be made through the Director of Off-Campus Programs.

International Opportunities Scholarship Mr. Shane and Mrs. Melissa De Jong Schaap have generously established a scholarship of \$3,000 for a student entering the junior or senior year at Calvin. The student must have a minimum 3.0 grade point average and be a participant in one of Calvin's semester abroad programs (Britain, China, Honduras, Hungary, or Spain). The recipient must also be pursuing a major in His-

tory, Political Science, Economics, or Communications and be planning a vocation on the international scene. Applicants must write a brief essay about their career goals and how this scholarship will help them achieve their goals. At completion of the recipient's semester abroad, a short paper on his or her experience will be submitted to the donor. Application for this scholarship may be made through the Director of Off-Campus Programs.

Russian Student Scholarship This scholarship, established by Mr. Milt and Mrs. Carol Kuyers and Mr. Dennis and Mrs. Sandy Kuester, grows out of their experiences in and involvement with higher education in Russia. Both the Kuyers and the Kuesters have spent time in Russia working with institutions there and now wish to provide the opportunity for a Russian student to study at Calvin. The student must come from the Russian-American Christian University where both Mr. Kuyers and Mr. Kuester have positions on the Advisory Board. Application for this scholarship may be made through the Director of Off-Campus Programs.

Philosophy Department

Bouwsma Memorial Scholarship Through the generosity of the late Mrs. Gertrude Bouwsma-Bos and in memory of her husband, the late Professor O.K. Bouwsma, scholarships are available each year to philosophy majors who exhibit outstanding achievement and continuing promise in philosophy. Professor Bouwsma was a Distinguished Alumnus of Calvin and an influential American philosopher. The recipient is selected by the Philosophy Department. Two \$950 awards were made in 2002-03.

Kenneth J. Konyndyk, Jr. Scholarship Professor Konyndyk taught in the Philosophy Department of Calvin for 27 years, until his life's work was cut short in 1994 by cancer. His career was characterized by professional scholarship of the highest caliber, an unwavering commitment to teaching as a Christian vocation, a genuine interest in his students, and the pleasure he took in the company of his colleagues. In his memory, the Konyndyk family has established scholarships to be awarded annually to philosophy majors entering the senior year. Applications are available in the Philosophy office.

Physics and Astronomy Department

Ivan E. and Rebecca J. Boerman Scholarship Dr. Ivan and Mrs. Rebecca Boerman of Grand Rapids, Michigan have provided the college with a gift out of gratitude for their Christian education and experience. It is their desire to honor Calvin Professor Howard Van Till, a long-time teacher, scholar, and friend, for his extensive contribution to Calvin and the broader evangelical community in the area of physics/astronomy. The income from this gift is used to provide scholarships to students in their first or second years that are pursuing a major in physics. New scholarships are awarded to prospective first-year students and can be renewed for the sophomore year for those who meet the renewal requirements. One new scholarship of \$1,500 was awarded for 2002-03.

Roger D. Griffioen Scholarship Physics and Astronomy Department alumni and friends have established a scholarship to honor Roger D. Griffioen, who retired in 1999 after 38 years on the Calvin faculty, including 19 years as department chairman and 7 years as academic dean. Scholarships are for students majoring in physics, with the number awarded each year being determined by funds available. One scholarship is always reserved for an incoming first-year student. One new scholarship of \$1,000 was awarded for 2002-03.

Political Science Department

DeKryger-Monsman Memorial Prize As a result of a gift to Calvin by Mrs. Gerald Monsman in memory of her husband, two scholarships are awarded each year to junior political science majors for use in their senior years at Calvin. The awards are given solely on the basis of academic achievement.

Peace and Justice Scholarship Each year one or more scholarships are awarded to sophomore, junior, or senior students actively involved with global peace and justice issues, particularly related to the causes of war and conditions for peace in the nuclear age. Although initially funded by Calvin alumnus Paul Hoffman, contributions from like-minded constituents and friends are welcome. The numbers and amounts of the scholarships vary each year, depending on the availability of funds.

John Van Dellen Scholarship in Political Science John Van Dellen, a Calvin graduate and generous supporter of the college, established this scholarship to honor his nephew, Calvin Political Science Professor Charles Strikwerda. Each year the scholarship is awarded to a student who (1) is a current Calvin sophomore or junior political science major, (2) has a cumulative grade point average of 3.0 or higher, and (3) is an excellent student in and out of class as demonstrated by regular, thoughtful, and cheerful contributions in class discussions and by participation in campus and/or community activities. The scholarship is intended for an all-around good student who contributes significantly to the classroom and campus environment.

Johan and Wilma Westra Scholarship Dr. Johan G. Westra was the first full-time Political Science professor at Calvin and taught for many years. He also served as the pre-law advisor for more than 20 years. Wilma Westra has served Calvin as bookstore manager, executive secretary of the Alumni Association, Coordinator of Adult and Continuing Education, and as a volunteer Knollcrest Festival chairperson. This scholarship was established to assist a student majoring in Political Science or who is in the Pre-law program. Special consideration will be given to students active in volunteer work and interested in a career of public service. Candidates should be entering the junior or senior year and have a grade point average of 3.0 or higher. One scholarship of \$1,300 was awarded in 2002-03.

Psychology Department

John Daling Memorial Scholarship Dr. John Daling was a founder of the Psychology Department at Calvin. He taught psychology from 1945 to 1974 and was a beloved professor, mentor, and friend to thousands of students. In his memory and honor, the Daling family has established this scholarship. Each year the scholarship will be awarded to a psychology major entering the junior or senior year with a grade point average of 3.2 or higher. The recipient will also display demonstrated Christian commitment, excellent character, leadership, and maturity. One scholarship of \$1,800 was awarded in 2002-03.

Lester and Viola De Boer Psychology Scholarship Dr. De Boer, a school psychologist, at-

tended Calvin from 1937 to 1940. He had a strong interest in special education and helping people with learning disabilities. His wife Viola formed this scholarship in his memory to recognize his achievements and to encourage and honor Calvin students studying in the field of Psychology. Applicants must have declared a psychology major and be entering their junior or senior year. They should have an excellent academic record. Financial need is an important consideration. Assuming that these requirements are met, preference will be given to students with physical disabilities or to students who have an interest in working with children with special needs. This scholarship is only offered when funds are available.

Cornelius A. and Lettie G. Plantinga Scholarship To honor their father and mother, the four sons of Dr. and Mrs. Plantinga, (Alvin, Leon, Terry, and Neal) have joined with other family members, friends, and former students of their parents to establish this scholarship. Dr. Plantinga taught psychology at Calvin from 1950 to 1973, and Mrs. Plantinga taught various grades in the Grand Rapids Christian and public schools, as well as serving the Education Department at Calvin as supervisor of student teachers. Dr. and Mrs. Plantinga believed in the power and beauty of Christian higher education and, particularly, of Christian higher education at Calvin. They and all their sons and most of their grandchildren graduated from Calvin. Applicants must be psychology majors entering their junior or senior years who demonstrate a desire and ability to think about psychology from a Christian point of view. A cumulative grade point average of 3.5 or higher is necessary to apply. Financial need is also an important consideration. One scholarship of \$3,900 was awarded for 2002-03.

Vanderploeg-Edgerly Scholarship Drs. Gretchen and David Edgerly have established this scholarship to recognize a promising student majoring in Psychology or Sociology or a student who has been accepted into the Bachelor of Social Work Program. Applicants must be entering the junior or senior year and have a cumulative grade point average of 3.0 or higher. In accepting the award, the recipient will agree to write a major paper on the topic of child sexual abuse. Two scholarships of \$1,500 each were awarded in 2002-03, one to a psychology major and the other to a so-

ciology major.

Religion and Theology Department

Bolt Family Scholarship This scholarship is provided in memory of father and son pastors, Reverend Martin Bolt and Reverend Calvin Bolt. Together they provided 75 years of service to the Christian Reformed Church through their ministry to congregations, leadership boards, and denomination government. They also displayed great love and support for world missions. To encourage and support students who intend to pursue seminary training, one or more scholarships are given annually to pre-seminary students at the junior or senior class levels. Selection is based primarily on the student's academic record and potential, although financial need is also taken into consideration. Applicants must be entering their junior or senior year. They must have a cumulative grade point average of 3.3 or higher. Preference is given firstly to candidates with interest in world missions and secondly to those planning to attend Calvin Seminary and to enter parish ministry. The amount of the scholarship for the academic year 2002-03 is \$1,500.

Dr. John H. and Gladys A. Bratt Family Scholarship This scholarship has been established by the children of Dr. John H. and Mrs. Gladys A. Bratt in Dr. and Mrs. Bratt's honor to recognize Dr. Bratt's distinguished professorship of 30 years in the Department of Religion and Theology at Calvin. This scholarship is intended to provide recognition and financial assistance to junior and senior students of Calvin who are pursuing either parish ministry, missionary service, or a teaching career in religion and theology. Applicants may be, but need not be, majors or minors in the Religion and Theology Department. They must have a cumulative grade point average of 3.30 or higher. The amount of this scholarship is \$2,100 for 2002-03.

De Rose Family Scholarship for Women in Ministry Dr. William and Mrs. Henrietta De Rose of Palos Heights, Illinois have established this scholarship to offer support and encouragement to women students planning to pursue a career in Christian ministry. Candidates should be planning to attend seminary and be entering their junior or senior year. A grade point average of 3.0 or higher and financial

need is required. One \$1,500 scholarship was awarded for 2002-03.

Gordon J. Spykman Memorial Scholarship

The family of Gordon J. Spykman established this scholarship to honor the life, work, and convictions of Professor Gordon Spykman who died in 1993 after teaching at Calvin for 32 years. The Gordon J. Spykman Memorial Scholarship encourages students to explore the implications of Jesus Christ's claim on every square inch of creation, on all spheres of life. Recipients must be religion and theology majors or minors who demonstrate an interest in the reformational worldview that Professor Spykman articulated in his writings and teaching at Calvin. Candidates for this scholarship must be entering the junior or senior year, have a cumulative grade point average of 3.0 or higher, and have an interest in a reformational worldview. Two scholarships in the amount of \$1,300 were awarded for 2002-03..

William and Anna Vanden Bosch Scholarship

In grateful response to the Lord's blessings and out of a desire to share these blessings, Mr. and Mrs. Vanden Bosch have established this scholarship. They wish to support those students seeking to enter parish ministry, particularly pastoral leaders with a heart for missions. Three scholarships of \$2,250 each were awarded for 2002-03.

John S. Vander Heide III Memorial Scholarship

Mr. and Mrs. John S. Vander Heide, Jr. have established a scholarship in loving memory of their son, John III, who passed away in 1989 at the age of 28. Because John III was greatly influenced by his pastors, Mr. and Mrs. Vander Heide wish to offer a scholarship through the Religion and Theology Department to pre-seminary students who show promise of theological and pastoral leadership in the ministry of the Christian Reformed Church. Two scholarships of \$1,550 each were awarded for 2002-03.

Rev. David Warden Pre-Seminary Scholarship

Dr. Bret and Mrs. Marlene Kort of Colorado Springs, Colorado have established this scholarship to recognize the selfless service provided by the Rev. David Warden to the people on the Navajo reservation in Shiprock, New Mexico. One scholarship in the amount of \$1,000 is awarded each year to a student pursuing a pre-seminary program at Calvin who is entering

the senior year. The scholarship requires a cumulative grade point average of 3.3 or higher and preference is given to students who have demonstrated a commitment to Christian service and leadership while at Calvin.

Dr. and Mrs. William J. Yonker Scholarship

The Yonker Fund, originally established to award prizes for student papers in the area of Jewish evangelism, now grants an annual scholarship for Calvin students who intend to pursue a career in Christian ministry or missions. Candidates for this scholarship must be entering their junior or senior year at Calvin, have a cumulative grade point average of 3.0 or higher, and must write a brief statement setting forth their aspirations or career goals for Christian missions or ministry. Two scholarships of \$1,150 each were awarded in 2002-03.

Science Division

Howard Hughes Medical Institute Scholarship

Each year six \$2,500 renewable scholarships are awarded to incoming first-year students who plan to major in biology, chemistry, physics, or mathematics and plan to pursue a career in research or education.

John and Lillian Van Oosten Scholarship

As a result of a bequest to Calvin by the late Dr. and Mrs. Van Oosten, six scholarships of \$2,500 each are available to students pursuing studies in the natural sciences. Scholarships are awarded to juniors and seniors primarily on the basis of the students' academic records and financial need. Candidates for this scholarship must have a minimum grade point average of 3.0 or higher.

Steven M. Zifferblatt Memorial Scholarship

Mrs. Patricia M. Zifferblatt of Grand Rapids, Michigan has provided the college with funds to award scholarships in memory of her late husband, Steven. Because of Mr. Zifferblatt's spiritual experiences during the last five years of his life when he was in special need of health care, scholarships will be awarded to students who are pursuing a program in one of the health care professions such as medicine, dentistry, nursing, physical therapy, etc. Applicants will be required to write a paper on some aspect of health and of ethical issues related to health care. Applicants must be entering the senior year and have a cumulative grade point average of 3.0 or higher. Fifth-year seniors are also eligible to apply. One scholarship of \$5,600 was awarded for 2002-03.

Service-Learning Center

Stephanie L. Dykstra Memorial Scholarship This scholarship was established in memory of Stephanie Dykstra, a Calvin student who passed away unexpectedly on December 17, 1999 after suffering a pulmonary embolus. Stephanie left unfulfilled the typical dreams and expectations of a 19-year-old: vocational goals, plans for marriage, dreams for service in God's kingdom, and expectations of continued opportunities to be with family and friends. Yet, in her death, the family and friends who mourned her passing became more clearly aware that Stephanie had chosen a deeper investment than her own dreams and expectations. This scholarship is established by the family and friends of Stephanie Dykstra to recognize students who are clearly storing up treasures in heaven through their service and friendship to people in local communities and thus are recognized by their friends, teachers, and mentors as people who have truly trusted in God as their only comfort in life and death. Recipients of the scholarship will show dedication to the service of disadvantaged people through committed service-learning involvement and be recognized by those who know them well as people who have entrusted their life (and treasure) to Christ. One scholarship of \$1,400 was awarded in 2002-03.

Lighthouse Scholarship This scholarship has been established in honor of the Rev. William Vander Haak who has given his life in ministry to the Lord in the Christian Reformed Church. Rev. Vander Haak is a graduate of Calvin and Calvin Seminary, and has encouraged others to attend Calvin as well. He has also served as president of the Board of Trustees of the college, and has encouraged others to give their life in service to their Lord, as he has given his. The scholarship is established by his family to assist students who show their devotion to the Lord through their acts of service to others around them, and the name is taken from Matthew 5:16, 'Let your light shine before men, that they may see your good deeds and praise your father in heaven.' Candidates for the scholarship are nominated by members of the Student Life Division of the college; no application is required. One scholarship of \$1,500 was awarded for 2002-03.

Geraldine Vogelzang Leadership Scholarship This scholarship has been established by the extended family and friends of Geraldine Vogelzang in her honor. All are alumni, friends, and supporters of the college. The scholarship is an award for a student or students who have demonstrated through their class work or extracurricular activities that they have a commitment to service to others and leadership within the Kingdom. The donors' intent is to allow the recipient to provide Christian service during the summer months when he or she would otherwise have had to work to earn the funds the scholarship provides. Students must be entering the sophomore, junior, or senior year, have a cumulative grade point average of 3.0 or better, and although financial need is not required, it may be considered as a factor in awarding the scholarship. The recipient is required to write a report about his or her summer experience after the experience is completed. Apply through the Service-Learning Center.

Sociology, Social Work, and Criminal Justice Department

Barbara Gezon Baker Scholarship for Academic Excellence in Sociology and Social Work Mr. David Gezon of Grand Rapids, Michigan has provided the college with gifts to fund this scholarship in honor of his daughter, Barbara Gezon Baker. Additional gifts have been received by friends of the Sociology and Social Work Department. Scholarships are awarded to students entering the junior or senior year who have an outstanding academic record, particularly within the department. The quality of the student's written work may be considered as well. Candidates are nominated by department members; no application is required. Two scholarships of \$2,700 each were awarded for 2002-03.

Donald and Marie Boersma Family Scholarship The Boersma family has long believed that well-trained Christian social workers are critical to meet the needs of disadvantaged and hurting people. The family has established this scholarship to recognize a promising student in the Bachelor of Social Work Program. Normally, one award of \$2,000 is given annually to a promising junior BSW student who can renew the award for the senior year, provided the student maintains a grade point average of 2.5 or higher.

Connie Bratt Social Work Scholarship Connie Bratt, one of the first students from Calvin to pursue a professional career in social work, established this scholarship in hopes of encouraging other students in the Bachelor of Social Work program. Two scholarships of \$1,400 or more each will be awarded annually to two seniors who have been accepted into the Bachelor of Social Work program and who exhibit a commitment to Christian service.

Daniel C. Duyst Memorial Scholarship This fund has been established by the Duyst family of Grand Rapids, Michigan to honor the memory of Daniel's life of devoted service in law enforcement. Officer Duyst gave his life on Memorial Day 1994, at the age of 37, in a rescue attempt by selflessly responding to another's need. While special consideration may be given to those who aspire to a career in law enforcement, those interested in a broad range of service opportunities in court, correction, and treatment-related roles are eligible to apply. Applicants must be entering the junior or senior year, have a cumulative grade point average of 2.70 or higher, and be pursuing a Criminal Justice major. One scholarship of \$2,200 was awarded for 2002-03.

Leanne Joy Knot Memorial Scholarship With the generous help of many friends, the family of Leanne Joy Knot, a 1991 graduate of Calvin, has established a scholarship in loving memory of their daughter and sister, whose life was tragically taken in 1997 while she was a graduate student in social work and public health. Recipients must be social work or sociology majors entering their junior or senior years with a cumulative grade point average of 3.0 or higher. In addition, recipients must demonstrate a deep love of Jesus Christ, as expressed in the Reformed faith. This includes a sincere desire to (1) help children, (2) promote improved health care, education, and standards of living among the poor, or (3) volunteer in the Peace Corps. Financial need will also be considered.

Vanderploeg-Edgerly Scholarship Drs. Gretchen and David Edgerly have established this scholarship to recognize a promising student majoring in Psychology or Sociology or a student who has been accepted into the Bachelor of Social Work Program. Applicants must be entering the junior or senior year and

have a cumulative grade point average of 3.0 or higher. In accepting the award, the recipient will agree to write a major paper on the topic of child sexual abuse. Two scholarships of \$1,500 each were awarded in 2002-03, one to a psychology major and the other to a sociology major.

Spanish Department

Edna Greenway Scholarship Dr. Edna Greenway has taught students from elementary school and high school through college and seminary to speak and love the Spanish language. Therefore the Spanish Department wishes to honor her with an endowed scholarship so that future generations of students will benefit from her Reformed, Christian perspective on teaching and learning even after she had retired. This scholarship will encourage students to reflect on and articulate the importance of the integration of faith in their own lives and careers. Candidates should be entering the junior or senior year, have a grade point average of 3.3 or higher, and be pursuing a Spanish Education major. A short essay is required for this scholarship. One scholarship of \$1,100 was awarded in 2002-03.

Need-Based Financial Aid

Significant need-based financial aid is available to students from the college, the federal government, and 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 that 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 available from the Office of Scholarships and Financial Aid.

First-year applications for financial aid should be filed by February 15 (April 1 for Canadians) and upper-class applications should be filed by March 15 to receive maximum consideration. Later applications are considered if funds are available.

Exchange Grant for Canadian Students An exchange adjustment program has been es-

grant assistance in the Pell 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 \$4,000 per year.

Michigan Adult Part-Time Grant Program

This program provides a limited amount of grant assistance to needy adult Michigan students who are enrolled in an undergraduate program on a part-time basis. To be eligible, a student must have been out of high school at least two years, be enrolled for at least three but fewer than twelve semester hours, and qualify for financial aid as an independent student. Grants of up to \$600 per year are available for not more than twenty-four months of study. When there is not enough money to provide awards to all eligible applicants, preference is given to those with the greatest financial need.

Michigan Competitive Scholarships and Tuition Grants

The State of Michigan provides awards of up to \$2,750 (2002-03) 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.

Canada Student Loans The Canadian government sponsors an interest-free loan program for Canadian citizens similar to the Federal Direct Loan Program described above, with a maximum loan of \$5,600 to \$6,400 per year (Canadian), depending on the province. Application forms are available from provincial Offices of Education.

Albert Postman Loan Program The late Mr. Albert Postman of La Glace, Alberta, Canada has established a loan fund to assist Canadian students attending Christian colleges. The primary purpose of the fund is to assist students who are planning to enter full-time Christian service with the Christian Reformed Church or its related agencies. To the extent that funds are available, however, loans will also be made to other Canadian students who are in need of assistance.

Other Student Awards

Beets Calvinism Award The late Dr. and Mrs. Henry Beets established a fund, the income from which is used to award a \$250 first prize and a \$150 second prize for the best research papers on annually specified themes in Calvinism studies, written by Calvin students. The prize or prizes are awarded at the discretion of the Department of Religion and Theology.

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 to plan a 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.

Beversluis Awards in Christian Philosophy of Education

From income generated by a grant of money given by a retired professor of educational philosophy and his wife, two awards of approximately \$250 each are offered each year by the Education Department to students nominated by their professors for outstanding interest and competence in keeping good theorizing about Christian education connected to good practice in Christian education. Criteria include a grade point average of 3.5 or higher, significant initiative and contributions in classroom discussions, and outstanding written work in papers and tests.

Paul Boonstra Memorial Award

Each year the Department of Mathematics and Statistics makes an award in memory of Professor Paul Boonstra who taught mathematics education at Calvin from 1965 through 1987. The prize is awarded to a graduating senior specializing in mathematics education at the secondary level. The recipient is selected on the basis of performance in mathematics courses and in directed teaching. The award represents the income from a fund established by students and colleagues of Professor Boonstra.

O. K. Bouwsma Memorial Award in Philosophy Through the generosity of the widow of Professor O.K. Bouwsma and other benefactors, an annual prize of \$250 will be awarded to one upper-class student for distinguished achievement in philosophy and promise of future contribution to Christian scholarship. The Philosophy Department selects the recipient on the basis of submitted papers.

Calvin Alumni Chapter Scholarships Several Alumni Association chapters offer scholarships, which are administered locally, some to incoming Calvin first-year students and others to returning students. Candidates should consult the Alumni and Public Relations Office or a member of the local Alumni Association chapter for information.

Calvin Latin Award The Department of Classical Languages has received donations from alumni David Noe' and Marianne Graff to begin a yearly award to the outstanding student of Latin language and literature at Calvin. The winner is selected by the members of the Classical Languages Department and receives recognition on a plaque as well as a prize book. All current students of Latin are eligible for this award.

Chemistry/Biochemistry Outstanding Senior Awards Departmental awards are presented each year to the outstanding graduating senior with a major in Chemistry and/or the senior with a major in Biochemistry. Criteria are outstanding achievement in academics and research in the department of Chemistry and Biochemistry, service to the department, and potential for excellence in Christian service.

John De Bie Prize in History In memory of Professor John De Bie, an annual prize of \$75 is awarded for the best paper in history written by a Calvin student. Selection is made by the History Department faculty from submitted papers.

Thedford P. Dirkse Summer Research Fellowship Dr. Thedford Dirkse served as a professor in the Chemistry Department from 1947 to 1980. This fellowship was established by Dr. Brandon and Mrs. Patricia Wiers to support student summer research in the department. One fellowship in the amount of a summer research stipend is awarded each year.

William B. Eerdmans Literary Award The late Mr. William B. Eerdmans, Sr. established the William B. Eerdmans Literary Award in the interest of encouraging original, critical, and creative writing among Calvin students. The \$300 award is administered annually by the English Department.

Geology/Geography Outstanding Graduating Senior Award Departmental awards are presented each year to the outstanding graduating senior with a major in Geology and/or the senior with a major in Geography. The recipient is selected by the departmental faculty.

Dr. Roger A. and Bradley Hoekstra 'Toward Christian Excellence in Medicine' Award Roger A. Hoekstra, M.D., an alumnus and supporter of Calvin, and his son, Bradley J., an outstanding sophomore premedical student at Calvin, were tragically killed in an airplane accident in July 1981. In their memory, the Hoekstra family has established a scholarship fund, a part of whose income is used for an annual award to an outstanding senior premedical student. The award consists of a cash gift and an appropriate commemorative plaque. The candidate for the award will be nominated and selected by a faculty committee. The candidate must be a graduating senior who has completed more than two years of undergraduate work at Calvin and has been accepted into an accredited medical school. The award will be based on academic excellence, strength of Christian character, and potential for excellence and Christian service in the practice of medicine.

Dr. Peter D. Hoekstra Memorial Award Dr. Robert G. Andree and Mrs. Katherine Schuringa Andree have established a prize of \$1,000 to be awarded annually to an outstanding senior graduating with a major in history. The award is made in memory of the late Dr. Peter D. Hoekstra, a former professor of history at Calvin. Selection is made by the faculty of the History Department on the basis of academic excellence. The recipient must have completed at least two years of undergraduate work at Calvin.

Harmon D. Hook Memorial Award in English An award of \$300 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.

Institute of Management Accountants (IMA) Outstanding Accounting Student Award The local chapter of the IMA annually recognizes the top accounting student at Calvin, based on a recommendation by the instructors in accounting. The student should intend to pursue a career in accounting.

Clarence Menninga Field Course Scholarship A scholarship fund established in honor of Calvin's first geology professor, Clarence Menninga, provides annually a \$650 scholarship to a student enrolling in a summer geology field course.

Rinck Memorial Prize A fund has been established by former students and friends as a memorial to William Rinck, professor of mathematics at Calvin 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 a senior student majoring in mathematics who has, in the opinion of the Department of Mathematics and Statistics, done superior work in undergraduate mathematics.

Templeton Student Award in Psychology The John Templeton Foundation has given a Science and Religion Course Award to support the teaching of Psychology 399, Psychology and Religion, the upper-level integration course in psychology. From this endowment, a cash award may be given to psychology majors who write excellent course papers in fulfillment of the requirements of this course each time the course is taught.

Bernard J. TenBroek 'Excellence in Biology in Research' Award At the time of his retirement from teaching, the Biology Department established the TenBroek Award fund. This award is given to a student completing the senior year of study who has declared a major in biology and has completed at least three of these years at Calvin. The recipient must

have demonstrated ability to do investigative work in the biological sciences and be completing application for graduate studies.

Bernard J. TenBroek 'Excellence in Biology in Secondary Education' Award At the time of his retirement from teaching, the Biology Department established the TenBroek Award fund. This award is given to a student completing the senior year of study who has declared a major in biology and has fulfilled the requirements for certification in secondary education. The student must have completed at least three years of study at Calvin to be eligible for this award.

Vander Ark Distinguished Teacher Education Student Award The Vander Ark family, known for the number of family members who have served as teachers and administrators, sponsors annually an award by the Education Department to outstanding student teachers who are nominated by their instructors for superior performance in student teaching and course work. The awards will be announced by May 1 of each year.

Zondervan Greek Award The Zondervan Corporation has established a yearly award for the outstanding student of ancient Greek language and literature at Calvin. The winner is selected by members of the Classical Languages Department and receives recognition on a plaque as well as books and other materials from Zondervan; names of winners are also listed on Zondervan's website. All current students of Greek are eligible for consideration of this award.

Henry Zylstra Memorial Award In honor of the memory of Professor Henry Zylstra, an award of \$200 is offered each fall to one or more senior English majors at Calvin who plan to continue studies in literature on the graduate level upon graduating from Calvin. The award is intended primarily to help defray expenses incurred in applying to graduate schools. Application should be made to the chair of the English Department by September 30 of the applicant's senior year. The recipient or recipients will be selected by the English Department on the basis of demonstrated academic ability, commitment to and promise of success in graduate work, and a concern for Christian liberal education.

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Professor of Sociology, Emeritus

Enno Wolthuis, M.S., Ph.D.
Professor of Chemistry, Emeritus

John W. Worst, Ph.D.
Professor of Music, Emeritus

Doris J. Zuidema, M.A.
Professor of Physical Education, Emerita

Mary E. Zwaanstra, M.S.W.
Associate Professor of Social Work, Emerita

Paul J. Zwier, M.A., Ph.D.
Professor of Mathematics, Emeritus

Active

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Professor of Psychology
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Professor of Psychology
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Associate Professor of Philosophy
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Professor of Education
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Director of Graduate Studies
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