



Academic Information

Academic Vice President and Dean of the College

The dean is the chief academic officer at Houghton. Questions concerning academic policy and programs should be directed to the dean. The office is on the first floor of Luckey Building.

Dean of Academic Administration

The dean of academic administration supervises the delivery of the academic programs and curricula of the college; administers and applies student-related academic regulations and policies, and carries out other responsibilities as assigned by the academic vice president.

Academic Records

The director of academic records will answer questions concerning records, schedules, transfers, transcripts, etc. The academic records office is on the second floor of Luckey Building.

Department Chairs

The college academic structure is organized into fifteen departments: Art, Biology, Business and Economics, Chemistry, Education, English and Communication, Foreign Languages and Linguistics, History and Political Science, Integrative Studies, Mathematics and Computer Science, the Greatbatch School of Music, Physical Education/Exercise Studies and Recreation/Leisure, Physics and Earth Science, Psychology and Sociology, and Religion and Philosophy. The chair of each department is available to students for counseling and advising.

Faculty

The faculty of the institution includes all full-time teaching faculty, all those individuals classified as nonteaching faculty by the administration (for example, the professional library personnel, the associate deans for student development, and the administrators who report directly to the president). Other categories of faculty include: part-time, lecturers, adjunct and interim.

Degrees Offered

Houghton College offers courses of study leading to the degrees of master of music (MMus), master of arts in music (MA), bachelor of arts (BA), bachelor of science (BS), bachelor of music (BMus), and an associate of arts degree (AA). A two-year Christian ministries course in Bible and related studies leads to an associate in applied science degree (AAS).

Requirements

Graduation

A student must complete at least one major and at least one minor. If a student completes two majors, a minor is not required. Candidates for BA and BS degrees must complete 124 semester hours plus one hour of First-Year Introduction (FYI) required of all first-year students. Candidates for the BMus must complete 128 semester hours, plus one hour of FYI required of all first-year students. No

more than 8 hours of Horsemanship, ROTC, or Theater Workshop may count toward graduation. Also, no more than 8 hours of applied music may count toward graduation for students who are not majoring or minoring in music. The minimum quality point average for graduation is 2.0. Grades in major, minor, and concentration courses must be "C-" level or higher.

Residency Requirements

A student must complete at least 30 hours, one-half of the major and 18 of the last 24 hours at Houghton (except those under the Senior-in-Absentia privilege or those with special permission whose major or minor require them to be off campus). Other cases will require a petition.

Second Degree

A second bachelor's degree (different from the first one) may be earned by completing 30 additional semester hours in residence and fulfilling all the requirements for the second degree, the major for which shall be in an area unrelated to the major of the first degree. A second degree is not to be confused with a double major, for which only one degree is granted.

Changes in Requirements

Changes in graduation requirements may occur during a student's career. On such occasions, students generally complete requirements as specified in the catalog for the year of their matriculation. However, the student may select a subsequent catalog in effect during his or her college career. Occasionally changes are made which include more precise implementation guidelines. If the student believes the program is unfairly or unreasonably modified, the student should consult the Academic Records Office.

Liberal Arts Requirements

Most of the courses at Houghton College are liberal arts courses, designed either for contributing to a general education or for enhancing understanding of a particular subject area or discipline of inquiry. Other courses are professional in nature, designed to prepare a student for a specific occupation, e.g., education, business, ministry.

The college requires a minimum of 90 hours of liberal arts courses for the BA degree and 62 hours for the BS degree (in addition to specialized areas of professional work), and a minimum of 32 hours for the BMus degree. These various curricula are designed to ensure that these minimums are achieved.

Master of Arts in Music; Master of Music

A candidate for a master's degree chooses a curriculum from the listings to be found in the Greatbatch School of Music Graduate Bulletin.

Bachelor of Arts

A candidate for the bachelor of arts degree selects a major and that choice must be approved by the chair of that department.

The BA degree requires a minimum of 90 hours of liberal arts and a total of 124 hours (plus one hour of FYI for Houghton first-year students). An academic minor is also required unless otherwise specified.

Bachelor of Science

A candidate for the bachelor of science degree may select a major from business administration, communication, computer science, Bible, educational ministries, childhood education, physical education, recreation, science, or writing. The BS degree candidate must also complete a minor or minors, plus sufficient elective hours to complete 124 hours. The minor(s) may be either in an area of liberal arts or in a professional field. The BS degree requires a minimum of 62 liberal arts hours and a total of 124 hours (plus one hour of FYI for Houghton first-year students).

Bachelor of Music

A candidate for the bachelor of music degree chooses a curriculum from the listings to be found under music in the Academic Programs section.

Associate of Arts

A student earns the associate in arts degree by completing a total of 62 semester hours (plus one credit for FYI) distributed in three categories: 42 hours in level I integrative studies requirements, 15 to 16 hours in a departmental concentration, and 2 or 3 hours of electives in two different areas.

The AA degree is designed to prepare students for continued studies in the liberal arts. However, the program also provides a general education for those wishing a two-year course for their own cultural enrichment.

Associate in Applied Science

A student earns the associate in applied science degree by completing the two-year Christian ministries course of 62 semester hours (plus one credit for FYI, if required), of which at least 22 are in liberal arts.

Majors/Minors

Each student normally selects, during the first semester of the sophomore year, one major and at least one minor area for specialized study. (Note: students who select two majors do not need a minor.) Enrollment in other than registered or otherwise approved programs may jeopardize a student's eligibility for certain student aid awards. Houghton College grants degrees in the following areas:

<i>Department of Art</i>	<i>Degree</i>	<i>HEGIS Code*</i>
Art	BA	1002
<i>Department of Biology</i>		
Biology	BA, BS	0401
General Science	BA, BS	4902
<i>Department of Business and Economics</i>		
Accounting	BS	0502
Business administration	BS	0506
<i>Department of Chemistry</i>		
Chemistry	BA, BS	1905
General science	BA, BS	4902
<i>Department of Education</i>		
Childhood Education	BS	0802
Adolescence Educ:		
Biology	BA	0401.01
Chemistry	BA	1905.01
English	BA	1501.01
French	BA	1102.01
Mathematics	BA	1701.01
Physics	BA	1902.01
Social studies	BA	2201.01
Spanish	BA	1105.01
<i>Department of English and Communication</i>		
Communication	BA, BS	0601
English	BA	1501
Writing	BA, BS	1507
<i>Department of Foreign Languages and Linguistics</i>		
French	BA	1102
Spanish	BA	1105
<i>Department of History and Political Science</i>		
History	BA	2205
International relations	BA	2210
Political science	BA	2207
<i>Department of Integrative Studies</i>		
Intercultural studies	BA	2210
<i>Department of Mathematics and Computer Science</i>		
Computer Science	BS	0701
Mathematics	BA	1701
General science	BA, BS	4902S
<i>School of Music**</i>		
Music	BA, MA	1005
Composition	MusB/MM	1004.10
Music Education	MusB	0832
Perf: Piano	MusB/MM	1004
Perf: Voice	MusB/MM	1004
Perf: Stringed Instruments	MusB/MM	1004
Perf: Organ	MusB/MM	1004
Perf: Brass Instruments	MusB/MM	1004
Perf: Woodwinds	MusB/MM	1004

Collaborative Performance	MM	1004
Conducting	MM	1004
<i>**See Graduate Bulletin for information regarding Masters Degree programs in Music.</i>		
<i>Department of Physical Education/Recreation</i>		
Physical education	BS	0835
Recreation	BS	0835
<i>Department of Physics and Earth Science</i>		
Applied Physics	BS	1999.20
Computational Physics	BS	1999.20
Physics	BA, BS	1902
General science	BA, BS	4902
<i>Department of Psychology and Sociology</i>		
Psychology	BA	2001
Sociology	BA	2208
<i>Department of Religion and Philosophy</i>		
Bible	BA, BS	1510
Christian ministries	AAS	5502
Church ministries	BS	1510
Educational ministries	BS	1510
Humanities	BA	4903
Philosophy	BA	1509
Religion	BA	1510
<i>Interdisciplinary/Special Studies</i>		
Management	BS	0515
Liberal arts	AA	5649

**HEGIS - Higher Education General Information Survey*

Integrative Studies (General Education)

Academic work at Houghton is organized under four heads: integrative studies, major work, minor work, and elective work. The system of majors and minors provides for general coordination and some intensive training that is often introductory to later professional preparation. Each student should select a major and at least one minor.

Majors/Minors

In the major the student must complete a minimum of 24 semester hours of major credit (any course numbered 200 or above unless otherwise specified). At least one-half of a student's major must be completed at Houghton. The minor consists of 12 or more hours of work acceptable for major credit unless otherwise stated. No grades below C- count toward the major or minor. Majors are elaborated above; minors may be found in the academic programs section of this catalog.

Contract Minor

This option is available for students wishing to specialize in an area not covered by an existing minor. It consists of 12 to 15 hours of courses 200 or above and will be proposed by the student in consultation with the faculty advisor and approved by the Academic Dean's office. Approval for such contract minors will include consideration of how the choice of courses supports the stated academic goals of the student.

Integrative Studies Requirements for BA and BS Degrees

In keeping with the major objective of the college, to provide a liberal arts education within the framework of the Christian faith, each candidate for the BA and BS degree is required to take a stipulated package of courses unless given graduation credit and/or advanced standing on the basis of advanced placement or standardized departmental tests. (Graduation credit and/or advanced standing are contingent on a favorable review of the examination papers by Houghton faculty members.)

POLICIES

Semester Schedule Load-Limit Policy

The flat-rate tuition plan at Houghton allows students to take 12 to 18 credits per semester, and a typical student's course load is 15 or 16 semester hours. However, some special limitations and conditions apply.

- a. A student admitted under “**light-load**” provisions is not permitted to take more than 14 credit hours. (Note: Highlander Adventure [2 credits] will appear on the fall transcript but does not count against load limits.)
- b. The student on **academic probation** is not permitted to take more than 15 hours.
- c. Any other student in good standing may take up to 17 hours. However, a student on **academic guidance** who wishes to take 16 or 17 hours must have the explicit approval of the advisor or mentor.
- d. To take 18 credit hours, a student must have the specific permission of his or her advisor recorded on a form in the academic records office.
- e. To take 19 credit hours, a student must petition the associate academic dean for permission to do so. This academic petition requires the approval of the advisor.
- f. Special circumstances may be addressed through academic petition. (Academic petition blanks and load-limit forms are available in the academic records office.)

The student’s choice of courses, once made and filed, is expected to be permanent for the semester. If a course change becomes necessary, it must be recorded on a change of schedule form provided by the academic records office. After the form has been signed by the student’s curriculum advisor, it must be returned to the above office immediately.

Drop/Add Permission

Courses (including independent studies and tutorials) may not be added for credit after the first ten academic days. Courses from which a student withdraws during the third through the tenth weeks will be recorded as “W”. Courses discontinued within the last four weeks of the semester are assigned “F”. **Students are not officially withdrawn from a course until the signed change of schedule form is in the academic records office.** The date on which a student officially withdraws is the date given on the notification sent to the instructor from the academic records office. (See Mayterm policy for additional important information.)

Classroom Attendance

Students are expected to attend classes. Each instructor will state expectations in the course syllabus that is to be distributed at the start of each semester.

Audit

Courses may be audited with permission from the professor. This involves enrolling for the course, attending, but receiving neither grade nor academic credit. Charges vary according to the type of course being audited and the rest of the student’s load. The full policy can be found at the academic records office.

Double-counting

This policy addresses the situation in which a single course satisfies requirements in more than one major or minor subject. Such a course is permitted to count toward the credit-hour requirements in more than one major or minor subject if and only if (1) the student’s program in each major subject includes a minimum of 24 credit-hours of coursework not double-counted and (2) the student’s program in each minor subject includes a minimum of 12 credit hours of coursework not double-counted. This policy also applies to courses that are cross-listed, that is, that are identified by more than one prefix, as long as the course-level requirements for those cross-listed courses are the same. Courses that are not the same should be identified by different numbers as well as different prefixes. The restrictions on double-counting described above do not apply to courses that fulfill both integrative studies requirements and the requirements of a major or minor. That is, integrative studies courses may be counted toward a major or minor subject without limitation. *Neither do the restrictions on double-counting apply to concentrations associated with the childhood education major.*

Final Exam Policy

Houghton College does not have an official final exam policy. However, if a student believes the scheduling of too many exams in one day poses a problem, she or he may appeal to the Academic Dean’s office.

Religious Observances

In compliance with New York’s Hevesi-Levy Act, Houghton College will accommodate any of its matriculated students who are unable to register for classes, take an exam, or attend a class because of religious beliefs (taken to mean the doctrinal beliefs of religious organizations which qualify as tax-exempt corporations under federal law).

Grading System

A literal system is used in the grading of college course work as follows:

A = Excellent	(94-100%)	A = 4.00	A- = 3.67	B+ = 3.33
B = Good	(85-93%)	B = 3.00	B- = 2.67	C+ = 2.33
C = Average	(73-84%)	C = 2.00	C- = 1.67	D+ = 1.33
D = Passing	(65-72%)	D = 1.00	D- = 0.67	
F = Below minimum standards		F = 0		

W-Withdrawn. An indeterminate grade applicable to a withdrawn course from the third through the tenth week of classes.

I-Incomplete. A temporary grade limited to a course in which a student has been excused for illness or given an extension for another significant reason. An incomplete grade is allowed to stand through one academic semester. Unless a grade has been provided at that time, the incomplete grade automatically reverts to an "F". Incomplete forms must be obtained from the academic records office.

P-Indicates satisfactory work done (equivalent to a regular grade of D or above); gives semester hours but no quality points.

U-Indicates unsatisfactory work; credit is not earned from the course and does not figure in the overall quality point average.

M-Indicates no grade was assigned. It may be used at midsemester when a class has not commenced, or for student teachers, or when special permission is granted by the academic records office. It can never be used at the end of a semester or a summer session.

NR-No grade assigned. Used only for courses extending beyond one semester.

Grade Grievance Procedure

The college has approved a formal procedure for resolving those occasions when a student actively disagrees with the grade received in a course. The steps are:

1. Within the first two weeks of the subsequent semester, the student will meet with the instructor. If a grade inaccuracy is determined, the instructor will process a grade change request.
2. If agreement cannot be reached, the student may contact the instructor's department chair, in writing, within ten working days after the meeting with the instructor. If agreement is reached, a grade change request is processed. If there is no agreement, or if the instructor is also the department chair, go to the next step.
3. The student may appeal the decision to the associate academic dean, in writing, again within ten working days. The AAD shall investigate carefully and render a decision, which shall be final. If the decision is to reconsider the grade:
 - a. The AAD shall, within ten days, form a panel of uninvolved, tenured faculty from the instructor's department. (From a designated pool, the AAD, the instructor, and the student will each select one member of the panel.)
 - b. The panel, within 30 days, will review all appropriate material and determine the final grade. The panel may retain the original grade or assign a new grade (which may be higher or lower than the grade in question), and it will so inform the records office.

Quality Point Average (also known as grade point average)

To derive a scholastic average for all of a student's courses each semester, letter grades are assigned numerical equivalents (as shown above) then multiplied by the credit hours for the course. The quality point equivalents grade point for all courses taken are totalled, then divided by the number of semester average) hours carried.

An example:

Course	Hours	Grade	Value	Points
Biblical Literature	3	C	2.00	6.00
Western Civilization	2	B	3.00	6.00
Lifetime Wellness	1	B-	2.67	2.67
Pre-Calculus	3	D+	1.33	3.99
Intro to Psychology	3	B+	3.33	9.99
Intermediate Spanish	4	A-	3.67	14.68
Totals		16		43.33

QPA = 43.33 divided by 16 = 2.708, recorded as 2.71

Courses taken off-campus under Houghton College direction (see special studies section) are considered to be work taken at Houghton College and grades will be recorded. For all other satisfactory off-campus coursework, only a "P" grade can be recorded.

Repeating a Course

Students can only repeat courses in which they received D+ or lower. When a course is repeated at Houghton, only the higher grade will count in the calculation of the cumulative average. The hours count only once. Both courses and both grades remain on the transcript with an indication of which course is counted. Repeating a course may influence a student's financial aid or sports eligibility.

Eligibility for Participation

A student in good standing must maintain a cumulative quality point average of 2.0; being in good standing is a prerequisite to eligibility to participate in all college activities (unless specifically waived). Note: some campus positions require a 2.5 QPA; investigate before any election.

Both the semester and cumulative quality point averages can affect one's eligibility.

Honesty

Students are expected to exhibit extreme care relative to personal honesty in the classroom, in homework, in papers submitted to the instructor, and in quizzes and tests.

Dishonest work in written assignments is (a) the receiving of aid or information without giving due recognition to the source from which the aid or information was obtained, or (b) the giving of aid or information without ascertaining that due recognition is being given to the source. Each professor shall define to the class what constitutes dishonest work in the course.

Students found guilty of dishonesty in any daily work, notebook work, term papers, or tests will automatically receive a zero for that work. All offenses after the first shall be referred to the associate dean.

Any dishonesty on a test or examination will be referred to the associate dean and will result in loss of credit for the course and a notation on the permanent records of the college.

Dishonest work may be considered grounds for suspension from the college. Unauthorized use of college computing equipment, facilities, or programs may also be considered grounds for suspension from the college and may lead to more serious consequences.

Classification

To receive classification as a sophomore, the student must have a minimum of 28 semester hours of accumulated credits; as a junior, a minimum of 60 hours; as a senior, a minimum of 90 hours. The student must also have maintained a quality point average of 2.0 for unconditional classification in any class.

Academic Guidance & Probation

Each incoming student is assigned a faculty mentor who is responsible for academic advising during the first year. A student receiving a semester quality point average below 2.00 but who is not placed on academic probation is placed on academic guidance and is encouraged to work closely with the mentor or advisor.

A student whose cumulative quality point average for Houghton College work falls below the following guidelines at the conclusion of a semester is considered in serious academic difficulty and is placed on academic probation, and the student is required to meet with the mentor or advisor to develop a plan for academic improvement. Such a student is limited to 15 credit hours in the following semester. (Hours earned includes transfer hours.)

If the total credit hours earned is less than 15, GPA must be at least 1.0.

If the total credit hours earned is at least 15, but less than 27, GPA must be at least 1.5.

If the total credit hours earned is at least 27, but less than 39, GPA must be at least 1.75.

If the total credit hours earned is at least 39, GPA must be at least 2.0.

Academic Dismissal

A student is academically dismissed if he or she meets the criteria for probation two semesters in a row.

Any student dropped from the college for academic reasons may petition the Admission Committee for readmission. The case will be carefully studied to see if there is a basis for resuming the college program at Houghton.

A student dropped from the student body for the above reason and readmitted by the Admissions Committee is placed on academic probation and must maintain a quality point average of 2.00 or higher for each semester thereafter in order to remain in college.

Scholastic Honors:

President's List - To recognize students carrying a full load who achieve the ultimate grade point (4.0) in a semester, the President sends each student a letter of commendation.

Dean's Honor List - At the close of each semester, the dean of the college sends each student a letter who completes a minimum of 12 hours and who achieves a quality point average for the semester of 3.75 or above.

Dean's List - At the close of each semester, the dean of the college publishes a list of all students completing a minimum of 12 hours whose quality point averages 3.5 or above.

Graduation Honors

The faculty will select for graduation honors students of outstanding scholarship. For the recognition of cum laude, the student must have a cumulative quality point average of at least 3.25; for magna

cum laude, at least 3.50, and for summa cum laude, at least 3.80.

Students transferring from other colleges must complete 62 hours in Houghton College in order to be eligible for graduation honors. Graduation honors as published in the May commencement program are based on the cumulative record at the end of the spring (normally eighth) semester, including the valedictorian and salutatorian.

Honors Project

Outstanding students may be candidates for honors study projects and commencement citations in their major fields. To be declared eligible to undertake this special study program, a student must have a cumulative quality point average of 3.25 and a 3.4 average in the major (courses numbered 200 and above). A proposal must be prepared and submitted for approval over one year prior to graduation. Guidelines and policy details can be found at the academic records office.

Independent Study

Independent study is a directed course in reading or research in which the student pursues a topic of general or special interest and meets with the instructor for direction, progress reports, and evaluation. To be eligible for independent study, a student must have unconditional standing as a sophomore or higher and must have a cumulative GPA of 2.75 or better.

An application for independent study should be submitted during the semester **prior** to the semester of study. However, as an absolute cutoff, each application must reach the associate academic dean on or before the **seventh calendar day** after the first day of classes. Mayterm/Summer independent study applications should reach the associate academic dean by validation day.

A student may take independent study for 1, 2, or 3 hours a semester up to a maximum of 12 semester hours toward graduation. Any faculty member may supervise the independent study project, which must not duplicate regular course offerings. The burden of responsibility for learning will be on the student. Work on an independent study is to be completed within the semester, as in other courses.

Internships

Many academic programs at Houghton College recognize a field placement experience as an integral component of professional preparation. Internships are considered to be quality, experiential learning opportunities, generally in off-campus, nonacademic settings. They are intended as highly structured, professionally supervised experiences and usually occur during the junior or senior year of the student's academic program. Internships require approval by the supervising academic department and extensive involvement by the student. Supervision is a shared responsibility between the academic department and the selected field agency.

Tutorial Study

Tutorial work is for the benefit of the student who needs a currently unavailable course; for example, one not scheduled for the semester when it is essential for graduation or for remedial purposes. Tutorial courses must be from the regular college catalog. Course approval and registration for tutorial courses shall be made in advance of the instructor's assigning any tutorial work for credit. Concurrence by the advisor, instructor, department chair, and associate academic dean is required. The forms to be used for a proposed tutorial are available in the academic records office.

A tutorial fee shall be charged (see information on expenses). The teacher must meet with the student a minimum of 7.5 clock hours for each credit earned for the purpose of giving instruction and directing the work.

Mayterm

The three-week Mayterm begins on the Tuesday immediately following Commencement and usually concludes before June 1, except for 4-hour courses. Participation in Mayterm is voluntary. The academic purpose is to permit students to take an additional three semester hours of credit before commencing summer employment. In general, catalog courses are offered. Students and professors also are encouraged to work together on campus doing independent studies. Off-campus practicums, if desired, are arranged by the department chair. Travel in the U.S.A. and abroad is a feature of this period.

See Financial Information section for tuition information.

Senior-in-Absentia

Students of outstanding ability who are accepted by an accredited professional school after the completion of three years of undergraduate work may qualify for the appropriate degree by transferring back for Houghton credit the first two years of professional study, thus shortening by one year their professional training. Such students will be taking their senior year in absentia. In such instances the Houghton degree will be conferred at the end of the second year of professional studies. Senior-in-

absentia privilege does not apply to AA or AAS students.

The privilege described above may be available to students wishing to enter professional training for a career in medicine, veterinary medicine, dentistry, law, or engineering. Students entering nursing also may qualify for the senior-in-absentia privilege by transferring two years of nurse's training for the Houghton degree.

Preliminary application for the senior-in-absentia privilege must be made to the Houghton associate academic dean in the spring of the junior year. Additional details on this plan may be obtained from the academic records office. Students should notify the office of records at the beginning of their senior year. All senior-in-absentia students are considered August graduates.

Withdrawal from college

Any student in good standing is entitled to honorable withdrawal at any time. A student desiring to withdraw from the college (or one who does not plan to return the following semester) must obtain from the academic records office an application for withdrawal. After securing the appropriate signatures, the student must have the record cleared by the student financial services office. The form must be properly completed and filed with the academic records office before the student leaves campus. Withdrawal from college without accomplishing the above procedure will result in forfeiture of the right to honorable dismissal. No refunds (if applicable) will be made by the student financial services office until the academic records office certifies that the withdrawal procedure has been properly completed.

A student called away during the semester by an emergency (including military duty) and who finds it impossible to resume, must notify the academic records office of withdrawal immediately. Unless this notice is filed within three weeks, the student may forfeit the right to honorable dismissal and receive a grade of F in each course.

A student who withdraws or terminates must leave the ID card with the student financial services office at the signing of the withdrawal or termination notice. If the ID card has been lost or misplaced, a statement must be signed to that effect.

Student Academic Services

Houghton College offers learning-support services for students who qualify, including those with learning, mobility, sensory, or health impairments. Any student may come for academic counseling or tutoring support. Services available include: analysis of study strengths and weaknesses; counseling in time management, learning strategies, and examination strategies; some course-specific peer tutoring, and screening for other learning problems.

Students with Disabilities

Houghton provides academic support services to students with disabilities including those with learning, mobility, sensory, health, or psychological impairments. These services include liaison with faculty members, promotion of self-advocacy skills, and securing appropriate classroom accommodations. Study skills counseling and some tutoring are also available. Students with disabilities are encouraged to contact the Director of Student Academic Services during the application process to discuss required documentation and appropriate accommodations. Documentation should be no more than three years old. Diagnosis by an appropriately trained professional is required.

Students needing academic adjustments or learning support services must contact Dr. Susan M. Hice, Director, Student Academic Services (585.567.9239).

Students needing facility adjustments must contact Jeffrey B. Spear, Vice President for Finance and 504 Coordinator (585.567.9312).

The complete Policy for Students with Learning-Related Disabilities may be obtained from Dr. Hice or from the Admission Office.

Academic Petitions

Each student at Houghton may petition the associate academic dean, through the academic petitions committee, regarding any academic matter. Specific actions requiring petition include:

- waiver of a specific academic requirement
- waiver of a specific academic rule or stipulation
- permission for a special academic condition or activity
- request to take more than 18 credit hours in a semester

Actions not requiring petition action:

- permission for 18 hours (use "Request for Academic Overload Form")
- permission to increase credits in variable-credit course (use "Change of Schedule Form")
- permission to attend off-campus program (use specific application)

Further information is available in the academic records office.

Courses of Instruction

Course Numbering System

100 level courses...

typically taken the freshman year
do not typically give major or minor credit

200-399 level courses...

typically taken the sophomore or junior year
major credit requires courses to be at this level or higher
foundational courses for majors and minors
courses that build upon one or more foundational courses in the same discipline
or represents advanced integrative studies

400 level courses...

typically taken late in the curriculum
build upon two or more lower numbered courses in the same discipline
class size is generally smaller
pedagogy is seminar style or discussion-oriented or collaborative

Course Description Codes

Code	Explanation
3	Number of credit hours for the course (variable: may be 1, 2, 3, 4, or more)
3/3	Credit hours for a two-semester sequence
1, 2, or 3	Credit hour options
F	Course offered in fall
S	Course offered in spring
F&S	Course offered in fall and spring
May	Course offered in Mayterm
Summer	Course offered in a summer session
OD	Course offered on demand
F04	Course offered in fall, even-numbered years
F03	Course offered in fall, odd-numbered years
S03	Course offered in spring, odd-numbered years
S04	Course offered in spring, even-numbered years
F/S	Course offered in two-semester sequence
F/S 03-04	Two-semester sequence, offered alternate years

Note: The courses listed and their descriptions are subject to change. Adjustments in teaching assignments and normal academic flexibility may modify the material in this catalog, which was intended to be accurate at the time of printing.

Elective courses for which demand is insufficient may be withdrawn at the discretion of the dean of the college.

For a definitive listing of course offerings and times, consult the appropriate master schedule for each semester or special session, as published by the office of academic records.

Course Prefixes, Areas of Study, and Host Departments

Department of Art

ART art

Department of Biology

BIOL biology

Department of Business and Economics

ACCT accounting
BADM business administration
ECON economics

Department of Chemistry

CHEM chemistry

Department of Education

EDUC education

Department of English and Communication

COMM communication
ENGL English and literature
WRIT writing

Department of Foreign Languages and Linguistics

FREN French
GERM German
GREK Greek
HEBR Hebrew
LATN Latin
LING Linguistics
SPAN Spanish

Department of History and Political Science

HIST history
INDS interdisciplinary studies
POLS political science

Department of Integrative Studies

CLLS college life and leadership
 INCL intercultural studies
 INTS integrative studies

Department of Mathematics and
 Computer Science
 CSCI computer science
 MATH mathematics

School of Music*
 MCHU church music
 MKBD practical keyboard
 MCLV class voice
 MED music education
 MHS music history
 MLT music literature
 MTH theory and composition
 MUS ensembles; instrumental and
 piano classes; pedagogy
 MAP applied study: private lessons

*See *Graduate Bulletin for information regarding
 Masters Degree programs in Music.*

Department of Physical Education/
 Exercise Studies and Recreation/Leisure
 PHED physical education
 HRSM horsemanship
 REC recreation

ESCI earth science
 PHYS physics

Department of Psychology and Sociology
 PSY psychology
 SOC sociology and anthropology

Department of Religion and Philosophy
 BIBL Bible
 CHMN Christian ministries
 EDMN educational ministries
 HUM humanities
 MISS missions
 MIN ministry
 PHIL philosophy
 THEL theology
 URMN urban ministries

Adult Learning Opportunities
 ADC adult degree completion

Pastoral & Church Ministries Program:
 PBIB Bible
 PEDM educational ministries
 PMIN ministry
 PMIS missions
 PSSC social science
 PTHL theology

Special Programs
 Oxxx Oregon Extension

Department of Physics and Earth Science

Distribution of Hours for Academic Majors

CREDIT HOURS

Deg.	Major	*IS I	IS II	Pre-/ Co-req.	Major	Req'd Other	Minor & electives
BS	Accounting	39g	6k	14	46		20
BA	Adolescence (Sec) Ed	44m	9j	6	39-40	2nd major	variable
BA	Art	39a	12		49**		25
BA	Bible	42	9c		27		47
BS	Bible	42	9c		27		47
BA	Biology	38h	9j	16	26		36
BS	Biology	35i	9j	36	26		19
BS	Business Adm.	39g	6k	8	34		38
BA	Chemistry	38i	9j	19	35		24
BS	Chemistry	35i	9j	25	34		22
BS	Childhood (Elem) Ed	40m	6d,j	9	50	30-31 concntr	variable
BA	Communication	43f	9c		30		43
BS	Computer Science	39a	9c	8	34		33
BS	Chur. Ministries	42	9c		27/33	+37 music	0
BS	Educ. Ministries	42	9c		33	+12 Bible	26
BA	English	39g	9c		36		41
BA	French	42	9c		27-33		41-47
BA	General Science	35b	9c		46		35
BS	General Science	36b	9c		46		34
BA	History	42	9c		27		47
BA	Hist. (aug.)	40a	9c		36		40
BA	Humanities	42a	6e		37		40
BA	Intercultural Stu				35-44		
BA	Intnt'l Relations	40a	9c	6	38-39		34-35
BA	Mathematics	39a	9c		28		49
BA	Music	39	12		36-37		37-38
BMus	Music: Composition	36	0		variable		?
BMus	Music: Education	33-36	0		variable		N.A.
BMus	Music: Performance	36	0		variable		N.A.

BA	Philosophy	42	12c		24		47
BS	Ph. Ed: Teach.	44h	9k	12	38	+30 educ	0
BS	Ph. Ed: Non-tch'g	39h	6k	8	24		48
BS	Ph. Ed: Phys. Fit.	39h	6k	18	37	+3-12 intnshp	14-22
BA	Physics	35i	9j	16	24		41
BS	Physics	35i	9j	16	31		34
BA	Political Science	39g	9	3	27		47
BA	Psychology	42h	9c	3	31***		40
BS	Rec: Therapeu.	38h	6k	10	31		40
BS	Rec: Otdr/Camp	42	6k	8	32		38
BA	Religion	42	9c		38		36
BA	Sociology	39	9c	3	24		50
BA	Spanish	42	9c		27-33		47
BA	Writing	42g	9c		30		44
BS	Writing	42g	9c		30		44

* does not include any hours of beginning language (elective credit)

** students with a double major (art plus another academic discipline) need only 37 hours; see Art Department pages.

*** students with a double major may satisfy psychology major requirements with 25 hours.

only for students who can complete their el ed major by Dec. 2003.

Notes a-k on next page.

Notes: a = 3 hours of level I included in major

b = 7 hours of level I included in major

c = 3 hours of level II included in major

d = 6 hours of level II included in major

e = 9 hours of level II included in major

f = 2 hours of level I replaced by 3 hours in prerequisite

g = 3 hours of level I included in prerequisites

h = 4 hours of level I included in prerequisites

i = 7 hours of level I included in prerequisites

j = 3 hours of level II included in prerequisites

k = 6 hours of level II included in prerequisites

m = 2 hours of level I included in the major

Degree requirements: BA, BS: 125 hours

BMus: 129 hours

Academic program note

A student's academic program normally contains six elements:
 integrative studies, level I
 integrative studies, level II
 pre/co-requisites or additional requirements
 academic major
 academic minor(s) or concentration
 electives

Each student should ask his or her academic advisor about individual program expectations in each of the six areas.

Integrative Studies

Faculty: Paul Young (chair), Irmgard Howard, Rebecca Loaiza, Mark LaCelle-Peterson, Peter Meilaender, Terence Paige, Christopher Stewart, Stephen Woolsey

General Information:

The Department of Integrative Studies (IS) was created to express Houghton's commitment to the liberal arts and in particular to integrative studies or general education. It comprises faculty who serve jointly in this as well as their home departments. The goals of the department are:

1. To give IS equal standing with other aspects of the academic curricula;
2. To bring cohesion, sequence, and identity to IS, making it a distinctive of Houghton College;
3. To provide avenues of oversight, assessment, and innovation for the IS curriculum and its faculty;
4. To foster interdisciplinary cooperation within the IS curriculum;
5. To accomplish this by focusing on physical, emotional, social, cognitive, moral, and

faith development as well as on integration of multiple disciplines, of values and faith with learning, and of theory and history with practice.

Major/Minor: None

Houghton College Integrative Studies Requirements - BA/BS

The following requirements *must* be taken in the first year: **Biblical survey, college orientation, western culture and writing.** The following requirements *should* be taken in the first year: foreign language, physical education and research. Total hours for integrative studies equals 54.

Level I (42 hours)

- (1) **College Orientation Requirement:** CLLS 101 FYI (First Year Introduction)
- (3) **Writing:** ENGL 101 Principles of Writing. Students with a score of 670 or higher on the verbal portion of the SAT are to take Advanced Composition (WRIT 212 or 213) in place of POW.
- (0) **Research** (This requirement is attached to several first level IS courses each semester. See Master Schedule for approved courses.)
- (3) **Literature:** ENGL 201 Lit. of Western World
- (2) **Communication:**
(2) COMM 201 Fundamentals of Speech, or one of these:
*(3) COMM 210 Public Speaking
*(3) COMM 216 Organizational Communication
[*Hours above 2 count for degree but not for level I]
- (4) **Intermediate Language**
(4,4) Beginning Language I and II may be prerequisite
(Childhood education majors are required to take no more than two semesters of a modern foreign language.)
FREN 201 Intermediate French
GERM 201 Intermediate German
GREK 321 New Testament Greek
LATN 221 Intermediate Latin
SPAN 201 Intermediate Spanish
(Students whose native language is other than English may satisfy the foreign language requirement with English. Their English proficiency is demonstrated by their ability to meet all other Houghton College graduation requirements.)
- (3) **Social Science**, chosen from:
ECON 210 Principles of Microeconomics
ECON 211 Principles of Macroeconomics
POLS 101 Introduction to Politics
SOC 101 Principles of Sociology
SOC 243 Cultural Anthropology
- (2,2) **Western Culture**
HIST 101, 102 Western Civilization I and II
- (1,1) **Physical Education:**
PHED 101 Lifetime Wellness or 237 Holistic Health
PHED 102 Physical Education
Alternatives to PHED 102:
PHED 103, 104 Adaptive Physical Education
PHED 220 Adventure Sports
REC 102A Initiatives
REC 102B Backpacking
REC 109 Highlander Adventure Program
REC 211 Ecotour in Honduras
REC 212 Eco-tourism in Africa
Rec 218 Winter Ski Outing
REC 228 Trip Experience
HRSM 113 Horsemanship I
PHED 244 Instructor's Course in Red Cross Water Safety
- (3) **Mathematics**, chosen from:
MATH 107 Pre-Calculus
MATH 181 Calculus I
MATH 182 Calculus II
MATH 261 Linear Algebra
- (4) **Science** (with lab), chosen from
BIOL 103 Fundamentals of Biology

BIOL 105 Conservation Biology
BIOL 151 General Biology
CHEM 207, 208 Intro to Nutrition and Lab (both required)
CHEM 113 Elements of Biochemistry
CHEM 151 General Chemistry
ESCI 101 Physical Geology
ESCI 102 General Astronomy
ESCI 212, 213 Environmental Earth Science and Lab (both required)
ESCI 224 Atmospheric Science
PHYS 151 General Physics

(3,3) **Biblical Foundation**

(3) Biblical Survey: BIBL 101 Biblical Literature
(3) Christian Theology: THEL 209 Intro to Christianity

(4) **Philosophical Foundation** chosen from

(a) The combination of PHIL 200 Knowledge & Reality (2) and either PHIL 201 Ethics (2) or PHIL 210 Community, Ideology, and Environment (3); or
(b) PHIL 202 Metaphysics, Morality, and Mind (4); or
(c) PHIL 241 and 242 History of Philosophy I and II (8).

(3) **Music or Art**, chosen from

ART 131 Introduction to Visual Arts
ART 132 Art and Architecture in Context in Europe
ART 211 Drawing I
ART 221 Painting I
ART 231 Ancient Art History
ART 232 Renaissance Art History
ART 233 Art for Grade Teacher (Childhood Ed majors only)
ART 234 Art and Architecture in Europe
ART 237 Modern Art History
ART 241 Two-dimensional Design
ART 242 Three-dimensional Design
ART 245 Graphic Design I
ART 251 Sculpture I
ART 261 Printmaking I
ART 271 Ceramics I
ART 281 Foundations of Photography
ART 295 ST: Introduction to Watercolor Painting
ART 295 ST: Imaging the Landscape
ART 314 Art and History of Film
ART 322 Contemporary Art and Critical Theory
ART 395 ST: Landscape Painting
MLT 113 Masterworks of Sight and Sound
MLT 111 Intro to Music and Listening
MHS 222 Intro to Film Music
MHS 254 Music of World Cultures
MCHU 216 Intro to Hymnology (ministerial program only)
MCHU 351 Music and Worship
MUS 137, 143, 144, 145, 147, 149 Ensembles

Note: INTS 152 Honors Study in London satisfies Level I IS requirements in western civilization, philosophy, literature and fine arts.

Level II (12 hours)

(3) Languages and Literature

Any course in the Departments of English & Communication and Foreign Languages not used in level I (including any literature courses in the Department of Foreign Languages, but not including practicums, internships, foreign languages, English grammar, and theatre workshop).

(3) History and Social Science

Any course in the Departments of Business & Economics, History & Political Science, and Psychology & Sociology not used in level I (excluding SOC/PSY/POLS 309 Statistics, SOC/POLS 312 Research Methods, ECON 102 Personal Finance, and all accounting and business courses).

(3) Mathematics and Sciences

Any math course numbered above 155 or any other course from the departments of biol-

- ogy, chemistry, physics & earth science not used in level I.
- (3) **Advanced Bible**
Any Bible course numbered BIBL 211 or above except BIBL 251 Bible History and Geography, BIBL 261 Holy Land Tour, BIBL./MISS 341 Missions in Biblical and Theological Perspective, and BIBL 395 Special Topics in Bible (unless specifically approved).

Integrative Studies Research Requirement

Each student is required to fulfill an information research requirement by registering for an R-designated course and successfully completing all research-related requirements. This includes participation in a number of library sessions and completion of the research requirements for a particular course. R-courses are designated in the Master Schedule. There are 15 to 20 lower-level, integrative studies courses designated as R-courses each semester—for example, WRIT 212AR, COMM 210AR, PSY 111AR.

Houghton College Integrative Studies Requirements - BMus

These may be found in the Academic Programs section of the catalog under Music.

Course Descriptions

CLLS 101 First-Year Introduction (FYI) (P/U) (1, F&S)

FYI is an introductory course which addresses issues that first year students need to know to better acquaint themselves with college life. The course is aimed at developing an overall perspective of the issues related to integration into a liberal arts college and at addressing basic issues of adjustment to the academic milieu of higher education. Large-group and small-group sessions occur during the first nine weeks of the fall semester. Required of all entering freshmen.

INTS 152 Honors Study in London (15, S)
(See course description in Off-Campus Programs-First Year Honors Program.)

INTS 301 Engaging Australian Culture (1, F)
Weekly exploration of Australian culture outside the classroom, through travel, cultural events, and talking with Australians.



Academic Programs

ACCOUNTING (major and minor)

Department of Business and Economics: Kenneth J. Bates, chair

Faculty: Stephen Alderman, Jonathan Bradshaw

Website and e-mail: www.businessathoughton.com, business@houghton.edu

Mission: To develop Christlike scholar-servants to serve the people and manage the resources of corporations, small businesses, not-for-profit organizations, and churches.

Major: (46 hours in the major; 14 in pre/co-requisites)

The accounting major is a registered accounting curriculum in New York State and meets all of the educational requirements for certification in the accounting profession.

Required courses for the major but without major credit:

ACCT 211, 212	Accounting Principles I & II	6
ECON 210, 211	Principles of Micro and Macroeconomics	3, 3
BADM 140	Business Software Applications	2
		Total:.....14

Major required courses:

BADM 213, 214	Business Law I & II	6
BADM 406	Financial Management	3
BADM 302	Investment Management	3
BADM 309	Statistics	3
ACCT 311, 312	Intermediate Accounting I & II	6
ACCT 314	Cost Accounting	3
ACCT 315	Auditing	3
ACCT 316	Federal Income Tax	3
ACCT 317	Accounting Information Systems	3
ACCT 418	Advanced Accounting	3
BADM 212	Principles of Management	3
BADM 218	Marketing Principles	3
BADM 481	Senior Seminar	1
		Total:43

Major elective credit courses; choose 3 hours

BADM 301	Business Communication (BADM 301)	3
BADM 314	Human Resources Management	3
BADM 417	Business Strategy & Policy	3
(see double major option below)		
BADM 421	Internship in Accounting	6
BADM 496	Honors in Business	3
Economics courses numbered 200 or above		3
		Total:3

Double-major option: by selecting Business Strategy & Policy (BADM 417) as an elective and taking one more business elective course, requirements are fulfilled for a double major in Accounting and Business Administration.

Minor

An accounting minor consists of 15 hours above Accounting Principles I (ACCT 211). A student electing to take an accounting minor with a business administration major may not use accounting courses to fulfill elective requirements in the major area.

Computer Use Competency Requirements

All students majoring in any program of the Department of Business & Economics must meet a set of computer use competency requirements. (See details in the *Business Administration* section of this catalog)

Course Descriptions

ACCT 211 **Accounting Principles I** (3, F&S)

Basic theory and practices of financial accounting for proprietorships and partnerships. Prerequisite: BADM 140

ACCT 212 **Accounting Principles II** (3, F&S)

Accounting for corporations, cost accounting and statement analysis. Prerequisites: Spreadsheet competency, ACCT 211

ACCT 311 **Intermediate Accounting I** (3, F)

Measurements and valuation of assets, liabilities, and equities. Accounting principles and standards. Prerequisite: ACCT 212

ACCT 312 **Intermediate Accounting II** (3, S)

Special problems in accounting. Accounting for contingencies, bonds, pensions, leases, consolidations. Financial position and statement analysis. Prerequisite: ACCT 311

ACCT 314 **Cost Accounting** (3, S04)

Job order cost accounting, process cost accounting, standard cost systems, cost allocations, budgeting, cost-profit-volume analysis, behavioral considerations. Prerequisite: ACCT 212

ACCT 315 **Auditing** (3, S04)

Practices and procedures used by internal auditors and CPAs in verifying financial statements and records of organizations; legal and ethical requirements of auditor. Prerequisite: ACCT 212 or permission

ACCT 316 **Federal Income Tax** (3, F04)

Introduction to history and development of federal income tax. Study directed toward preparation of individual and corporate returns under IRS code and tax implications of management decisions. Prerequisite: ACCT 211, 212 or permission

ACCT 317 **Accounting Information Systems** (3, S05)

Design, maintenance, monitoring of computerized accounting systems. Includes systems and audit concepts. Prerequisites: BADM 155, ACCT 211, 212.

ACCT 323 **Tax Practicum** (1, S)

Supervised preparation of tax returns through the Voluntary Income Tax Assistance Program sponsored by the Internal Revenue Service. Prerequisite: ACCT 316.

ACCT 418 **Advanced Accounting** (3, S05)

Addresses complex issues in accounting including business combinations, consolidated statements, partnerships, government and not-for-profit organizations, foreign operations, and other current topics in the field. Prerequisite: ACCT 312.

ACCT 421 **Internship in Accounting** (6, F; 3, S)

Supervised experience in corporate or public accounting. By application only.

ACCT 460 **CPA Review (P/F)** (1-3, S)

Computer-assisted study and review of all areas covered on the CPA exam. Prerequisites: senior accounting majors or permission.

ACCT 295, 395, 495 **Special Topics** (1-4, OD)

ART (major and minor)

Department of Art: John M. Rhett, chair

Faculty: Gary Baxter, Scot E. Bennett, Theodore J. Murphy, John M. Rhett

General Information

The art department offers a program of study that is structured to develop in students an understanding of the meaning, both past and present, of art in society. Art majors and minors acquire comprehensive experience in use of materials and technique, while gaining confidence in their ability to integrate faith, knowledge, and creativity. The art major complements the Christian liberal arts experience to prepare students for teaching, professional art production, and graduate studies.

Studio areas in which majors and minors may concentrate include ceramics, drawing, graphic design, painting, photography, printmaking and sculpture. The program is diversified through visiting artists, on-campus gallery exhibits, and off-campus trips that expose students to cultural resources in cities throughout the northeast. The art department also offers Mayterm art history experiences every other spring in cities such as Paris, London, Florence, Rome, and Madrid.

Studio Art Major (BA)

(49 semester hours)

The studio art major requires 49 hours in art, including a concentration in one studio area, distributed as follows:

Required courses:

ART 211 Drawing I.....	3
ART 241 Two-dimensional Design	3
ART 242 Three-dimensional Design	3
ART 311 Anatomy & Figure Drawing <i>or</i>	
ART 411 Experimental Media in Drawing	3
Total	12

Three of the following six (preferably by the end of the sophomore year):

ART 221 Painting I.....	3
ART 245 Graphic Design I.....	3
ART 251 Sculpture I.....	3
ART 261 Printmaking I.....	3
ART 271 Ceramics I.....	3
ART 281 Foundations of Photography	3
Total	9

Four of the following five:

ART 231 Ancient Art History.....	3
ART 232 Renaissance Art History	3
ART 234 Art and Architecture in Europe.....	3
ART 237 Modern Art History	3
ART 322 Contemporary Art & Critical Theory	3
Total	12

Concentration:

ART 3xx Art Studio Elective**	3
ART 4xx Art Studio Elective**	3
ART 485 Senior Seminar & Concentration	2 or 3*
ART 486 Senior Concentration & Thesis	2 or 3*
Art electives (any ART courses except 131 and 233).....	6-9**

*a double concentration requires 3 hours (total: 51)

**9 hours of electives for the drawing concentration; 6 hours for all other concentrations

Double major in art and another discipline (37 hours)

There is also a studio art major which requires 37 hours in art for those students who choose to double major, distributed as follows:

Required courses:

ART 211 Drawing I.....	3
ART 241 Two-dimensional Design	3
ART 242 Three-dimension Design	3
Total	9

Three of the following five:

ART 231 Ancient Art History.....	3
ART 232 Renaissance Art History	3

ART 234 Art and Architecture in Europe.....	3
ART 237 Modern Art History	3
ART 322 Contemporary Art & Critical Theory	3
Total	9

Concentration:

ART 2xx Art Studio Elective	3
ART 3xx Art Studio Elective**	3
ART 4xx Art Studio Elective**	3
ART 485 Senior Seminar & Concentration.....	2
ART 486 Senior Concentration & Thesis	2
Art electives (any ART courses except 131 and 233).....	6-9*

**9 hours of electives for the drawing concentration; 6 hours for all other concentrations

Art Minor (15 semester hours)

A student may obtain an art minor by completing 15 hours in art including any three hours of art history, Drawing I, and nine additional hours of art courses.

Course Descriptions

Ceramics

ART 271 Ceramics I (3, F&S)

Basic study of clay as a three-dimensional artistic medium, working with hand-built and wheel-thrown techniques. Introduction to glazing, decorating, and firing processes.

ART 371 Ceramics II (3, S)

Intermediate study of clay as a three-dimensional artistic medium. Continuing development of form and craftsmanship through individual projects on the wheel and/or hand-built forms. Additional instruction in glaze chemistry and kiln-firing. Prerequisite: ART 271

ART 471 Ceramics III (3, S)

Advanced projects in clay. Emphasis shifted from purely investigatory exercises in form toward clarity of expression and execution. Individually designed projects with tutoring by instructor. Prerequisite: ART 371

ART 472 Advanced Ceramics (3, OD)

Self-directed study in consultation with the instructor. Emphasis on development of a quality body of work for exhibition. Prerequisite: ART 471

Design

ART 241 Two-dimensional Design (3, F&S)

Theory and application of compositional elements and principles of design. Experiences in two-dimensional problem solving. Lecture, group critiques, discussion.

ART 242 Three-dimensional Design (3, F&S)

Theory and application of elements of three-dimensional design through model-scale sculptural projects. Awareness and comprehension of three-dimensional structural and spatial relationships.

Drawing

ART 211 Drawing I (3, F&S)

Basic introduction to drawing media and techniques; exploration of concepts of form and space in varied subject matter.

ART 311 Anatomy and Figure Drawing (3, S)

Elements, principles, and techniques of artistic anatomy. Emphasis on presentations as they relate to the figure and portrait. Study of skeleton and musculature from casts and live models. Prereq: ART 211

ART 411 Experimental Media in Drawing (3, S)

Experimental processes, techniques, and concepts of investigative drawing. Emphasis is on drawing as an expressive media independent of immediate observation and as a viable end in itself. Prerequisite: ART 211

ART 412 Advanced Drawing (3, OD)

Self-directed study in consultation with the instructor. Emphasis on development of a quality body of work for exhibition. Prerequisite: ART 311 or 411

Graphic Design

ART 245 Graphic Design I (3, F)

Introduction to theory and practice of graphic design communication. Emphasis on techniques for

exploration of two-dimensional problems, and interpretation of verbal to visual form. Computer design is introduced.

ART 345 Graphic Design II (3, S)

Further development of conceptualization and visualization skill within graphic design media, including computer design. Assignments directed towards commercial production.

ART 445 Graphic Design III (3, S04)

Subjects include advertising campaigns, corporate identity systems, and a variety of complex contemporary design problems.

ART 446 Advanced Graphic Design (3, OD)

Intense study in preparation for challenges facing the design professional. Special emphasis in one or two areas of expertise, leading to presentation of designer's portfolio. Prerequisite: ART 445

ART 447 Graphic Design Internship (3, OD)

Practical experience to include interviews, placement, work experience in situation of mutual benefit to student and publishing house or designer. Prerequisite: ART 445 and portfolio review

Painting

ART 221 Painting I (3, F&S)

Visual problems of space, form, value and color studied in oil paint. Basic problems of pictorial composition and interpretation through representational/abstract approaches to observing life and the still life.

ART 321 Painting II (3, S)

Intensive study of a single subject which is then extended into a series, to develop a more sophisticated personal visual statement. Examples of subjects include still life, figure, interiors, abstraction. Prerequisite: ART 221

ART 421 Painting III (3, OD)

Emphasis on individual development and refinement of personal expression in various approaches to painting. Prerequisite: ART 321

ART 422 Advanced Painting (3, OD)

Self-directed study in consultation with the instructor. Emphasis on development of a quality body of work for exhibition. Prerequisite: ART 321

Photography

ART 281 Foundations of Photography (3, F&S)

An introduction to photography as a visual arts medium. Suitable for Integrative Studies elective. Emphases will be on developing critical evaluation skills, conceptualization, and production of compelling photographic imagery. Technical aspects of the camera, film development, and printing processes will be examined. Historical survey will aid in the development of a foundational and working vocabulary that engages other visual media and disciplines.

ART 282 Introduction to Black and White Photographic Processes (3, S)

For the student interested in continued development of technical and conceptual skills within traditional black and white processes. Expressive possibilities of special-effect films, filters, chemicals, and manipulative darkroom processes. Prerequisite: Art 281

ART 284 Introduction to Digital Imaging (3, S)

Introduction to the conceptual and technical skill required in creating compelling digital imagery. Students will be introduced to scanning, manipulation, collage, and electronic painting, with a variety of software programs. Digital camera use and the ethics of preparing electronic imagery for both print and online media will be examined. Prerequisite: ART 281

ART 382 Experimental Black and White Photographic Processes (3, OD)

Continued study within traditional black and white photography with an emphasis on experimental processes. Geared to the advanced photography student who wishes to pursue individualized study within one or two specific creative processes. Study will be structured with the art faculty to meet the needs of the advanced student. Prerequisite: ART 282

ART 384 Advanced Digital Imaging (3, OD)

Continued study and development of the creative possibilities of digital image making. Investigation of advanced processes in use of digital cameras and manipulative creative possibilities. Study will be structured by art faculty to meet the needs of the advanced student. Prerequisite: ART 284

ART 482 Advanced Photography (3, OD)

Self-directed study in consultation with the instructor. Emphasis on development of a quality body of work for exhibition. Prerequisite: ART 282

Printmaking

ART 261 Printmaking I

(3, F&S)

Introduction to the multiple art object through relief and intaglio processes. Examination of historical significance of print media.

ART 361 Printmaking II

(3, OD)

Continued development of conceptual, compositional, technical expertise in one or two printmaking processes, including lithography. Emphasis: color multiple image. One-on-one instruction, group critiques. Prerequisite: ART 261

ART 461 Printmaking III

(3, OD)

Individual examination of photo- and/or combination-process print-making, concentrating on personal expression through printmaking medium. Prerequisite: ART 361

ART 462 Advanced Printmaking

(3, OD)

Self-directed study in consultation with the instructor. Emphasis on development of a quality body of work for exhibition. Prerequisite: ART 361

Sculpture

ART 251 Sculpture I

(3, F03 & OD)

Survey of traditional sculptural ideas, tools, techniques, and materials. Group and individual projects dealing with conceptual and formal problems of additive and subtractive methods in wood, metal, stone.

ART 351 Sculpture II

(3, OD)

Exploration of three-dimensional form/space through individual creative experiences working with various sculptural media. Prerequisite: ART 251

ART 451 Sculpture III

(3, OD)

Advanced exploration of various sculptural concepts with development of the personal statement in one or more media. Prerequisite: ART 351

ART 452 Advanced Sculpture

(3, OD)

Self-directed study in consultation with the instructor. Emphasis on development of a quality body of work for exhibition. Prerequisite: ART 451

Special Topics

ART 295, 395 Special Topics

(1-3, OD)

A course designed to provide opportunity for students to explore avenues not covered in other listed courses. Examples include, The Artistic Book (bookbinding and papermaking), Figurative Clay Sculpture, Illustration, Portrait Media, Landscape Painting, Landscape Photography, and Web design.

History and Appreciation

ART 129, 229 Artists in Nature

(3 or 4, F)

(See course description in Off-Campus Programs - Houghton in Adirondack Park.)

ART 131 Introduction to the Visual Arts

(3, F or S)

Overview of the visual arts illustrating basic principles and underlying philosophy of art. Emphasis on the contemporary.

ART 132A Art and Architecture in Context in Europe

(3, M04)

A course for the non-art student participating in the Mayterm trip to Europe. Approximately 20 days studying art and artists from antiquity to the present. Readings, journal-keeping and questions pertaining to site-specific works are required. Minor and integrative studies credit.

ART 231 Ancient Art History

(3, F04)

History of world art from prehistoric to the 14th century. Emphasis on function of art as visual communication of religious, political, and social concerns.

ART 232 Renaissance Art History

(3, F03)

History of western art from the 14th century to the mid-18th century. Relation of form and content to cultural attitudes. Unique contributions of major artists.

ART 233 Art for the Grade Teacher

(3, S)

Lecture-laboratory combination to give the future elementary teacher a grasp of art education theory and the creative use of materials and methods for various age groups. Prerequisite: permission

ART 234A Art and Architecture in Europe

(3, M04)

Approximately 20 days studying the art and artists from antiquity to the present. Readings, journal-keeping, and questions pertaining to site-specific works are requirements. Course is intended for the

art major, but Integrative Studies credit may also be granted.

ART 237 Modern Art History (3, F04)
History of Western art from the mid-18th century through the 19th and early 20th centuries. Analysis of major movements and artists, their underlying philosophy and cultural influences.

ART 314 The Art and History of Film (3, F)
An introduction to the history, craft, theory, and critical content of film; 15 films viewed in class, 20-25 outside of class research work.

ART 322 Contemporary Art & Critical Theory (3, S05)
Introduction and discussion of influences and developments at work in the world of contemporary art, including pop, minimalism, and performance art. Multicultural and post-modernist ideas and the role of art critics in shaping dialogue will also be considered.

Senior Concentration

ART 485 Senior Seminar and Concentration (2, F)
Practical experience in organizing an exhibition, preparing a body of work for portfolio documentation, and written documentation through formal thesis statement. A variety of readings, discussion, studio work, and critique comprise the course atmosphere. Required of all senior art majors during the fall semester.

ART 486 Senior Concentration and Thesis (2, S)
Advanced study in chosen area of studio concentration with interdisciplinary critiques including all senior art majors. Emphasis on development of a quality body of work for exhibition and formal documentation through written thesis. Required of all senior art majors in the spring semester. This course is repeatable for extra studio emphasis.

BIBLE (major and minor)

Department of Religion and Philosophy: Harold Kingdon, chair

Faculty: Richard Eckley, Harold Kingdon, Kristina LaCelle-Peterson, Terence Paige, Carl Schultz

Bible (BA/BS): (27 hours in the major; 3 in pre/co-requisites)

A major in **Bible** is recommended for those expecting to become missionaries, teachers of Biblical studies, or leaders in para-church ministries.

Required courses for the major but without major credit:	
BIBL 101 Biblical Literature	3
Major required courses:	
BIBL 221 Biblical Interpretation	3
BIBL 231 Pentateuch	3
BIBL 233 Life of Christ.....	3
At least one Old Testament.....	3
At least one New Testament.....	3
BIBL prefix 211 or above	9
One theology course from the following	3
THEL 313 Systematic Theology or	
THEL 351 Biblical Theology: Old Testament or	
THEL 352 Biblical Theology: New Testament	
Total:	27

Minor: (12 hours in Bible, numbered 200 or above)

Course Descriptions

BIBL 101 Biblical Literature (3, F&S & May)
Survey of the types of literature found in the Bible. Considers the origin of the Biblical texts and canon; basic issues of interpretation (hermeneutics); and an outline of the history of Israel and of the New Testament church as a backdrop for the message. Literary, historical, and theological aspects of selected texts will be explored. **This is a prerequisite for all Bible courses and THEL 209.**

BIBL 221 Biblical Interpretation (3, F)
Development of Scripture interpretation within the Judeo-Christian tradition, noting both general and specific principles which will, in turn, be applied to issues of current concern.

BIBL 231 Pentateuch (3, S)
Analysis of critical and historical background, literary content, and development of the religion of Israel. Relevancy of contents.

- BIBL 233 Life of Christ** (3)
 Jesus' life and teaching, with emphasis on his eschatology and ethics; the theological distinctives of the gospel writers; and consideration of some critical issues in interpretation. Focus is mainly on the synoptic gospels.
- BIBL 251 Bible History and Geography** (3, OD)
 Study of the history of the Jewish people and surrounding civilizations. Old and New Testament backgrounds. Intensive study of the geography of the Holy Land. No IS credit.
- BIBL 261 Holy Land Tour** (2/3, OD)
 Through visits to cultural, historical, and archaeological sites in Israel, Biblical history and geography will be elucidated. Visits will be preceded by lectures and the reading of preparatory materials and followed by lectures and discussions. No IS credit.
- BIBL 303 Old Testament Historical Books** (3, F)
 Study of the 12 Books of History, including Joshua through Esther. Integrates critical, analytical, and devotional approaches, and combines inductive and lecture methods.
- BIBL 310 Old Testament Prophets I** (3, F)
 Historical background, biographical data, critical problems, and contents of Isaiah, Jeremiah, and six minor prophets preceding the Babylonian captivity. Relevancy of messages.
- BIBL 312 Old Testament Prophets II** (3, S)
 Historical background, biographical data, critical problems, and contents of Ezekiel, Daniel, and six minor prophets largely during and following the Babylonian captivity. Relevancy of messages.
- BIBL 321 Poetic Books** (3, OD)
 Consideration of the structure and contents of Hebrew poetry and wisdom literature with a comparative study of similar genre of literature in the Near East.
- BIBL 331 Early Pauline Epistles** (3, F)
 The epistles of Paul's major missionary travels: the Thessalonian, Corinthian, Galatian, and Roman letters. Background, contents, analysis of key passages.
- BIBL 333 Later Pauline Epistles** (3, S)
 Paul's prison epistles and pastoral epistles. Analysis of each book; exposition of great passages.
- BIBL 335 General Epistles** (3, S)
 Historical and exegetical treatment of the books of Hebrews, James, 1 and 2 Peter, and Jude, focusing on key passages, theology, and problems of interpretation and application.
- BIBL 337 Gospel and Epistles of John** (3, OD)
 John's gospel and epistles analyzed from a literary and theological perspective, with attention also to historical questions and to the nature of the Johannine community.
- BIBL 341 Missions in Biblical and Theological Perspective** (3, S04)
 An examination of the biblical foundations of missions. The course will explore the extensive Old Testament roots of missions and the New Testament development. It will build a biblical view of culture, worldview, the nature and function of the church, and other relevant topics. Attention will be paid to the application of appropriate principles of biblical theology, exegesis, hermeneutics, and contextualization and to the development of a diachronic approach to scripture. No IS credit.
- BIBL 351 Daniel/Revelation** (3, May)
 A study of the nature of apocalyptic literature, critical problems, and various systems of interpretation.
- BIBL 361 Job** (3, S)
 Historical, doctrinal, and cultural study of the book; special attention to the problem of human suffering, the afterlife in the Old Testament, and the concept that success indicates divine favor.
- BIBL 363 Dead Sea Scrolls** (3, OD)
 Study of their discovery, their contents, their importance, their contribution to textual criticism and their influence on Judaism and Christianity; attention given to the community from which they came.
- BIBL 371 Book of Acts** (3, OD)
 Study of the struggles and growth of the early church through in-depth analysis and discussion, with opportunity for contemporary application; lectures, group discussions, and student presentations.
- BIBL 395 Special Topics in Bible** (3, OD)
 Study of select blocks or groups of scripture related to a particular topic or theme.
- BIBL 410 Isaiah** (3, OD)
 A study of the historical, critical, and contextual issues, with an emphasis on a vital faith to our generation.

BIBL 412 Jeremiah	(3, OD)
Historical, cultural background, structure and contents of Jeremiah will be studied. Attention given to Jeremiah's influence on his contemporaries and the relevance of his message for our time.	
BIBL 453 1 Corinthians	(3, OD)
An intensive study of the literary structure, the historical setting, and the theology of 1 Corinthians. Prerequisites: BIBL 221 Biblical Interpretation, and at least one other upper level Bible course, or permission of the instructor.	
BIBL 191, -2; 291, -2; 391, -2; 491, -2 Independent Study	(1, 2, or 3)
BIBL 496 Honors in Bible	

BIOLOGY, BA, BS (major and minor)

Department of Biology: James M. Wolfe, chair

Faculty: Alan M. Belford, Timothy O. Leonard, Davis C. McGuirt, Matthew K. Pelletier, James M. Wolfe

Part-time: David Odell, David Schwert

Biology, BS (26 hours in major; 8 prerequisites; 28 co-requisites)

Prerequisites (8):	
BIOL 151, 152 General Biology	8
Required (26) which must include:	
BIOL 251 Genetics	4
BIOL 281 Introduction to Research	1
BIOL 482 Senior Seminar	1
Co-requisites (28):	
CHEM 151, 152 General Chemistry	8
CHEM 241, 242 Organic Chemistry	8
PHYS 101, 102 College Physics	8
MATH 181 Calculus I	4

Graduates from this major primarily enter graduate programs, some aspect of the health professions (allopathic medicine, osteopathic medicine, podiatry, optometry, dentistry, medical technology, physical therapy), veterinary medicine or environmental science.

Biology, BA (26 hours in major; 8 prerequisites; 8 co-requisites)

Prerequisites (8):	
BIOL 151, 152 General Biology	8
Required (26) which must include:	
BIOL 251 Genetics	4
BIOL 281 Introduction to Research	1
BIOL 482 Senior Seminar	1
Co-requisites (8):	
CHEM 151, 152	8

Graduates from this program primarily enter the field of science teaching in secondary schools.

Environmental Programs

Environmental programs at Houghton take advantage of the college's location in the Allegheny Plateau (ranging in elevation from 1000 to 2500 feet), with access to forest, river, and lake ecosystems, and within a day's drive of the Adirondack Mountains (where Houghton now has a 40-acre campus and offers a semester-long program; see Off-Campus Programs-Adirondack Park) and the Atlantic Ocean. In addition, Houghton's 1300-acre campus has forest and field areas for study. The 91-acre Spring Lake preserve, incorporating an old growth forest and undeveloped kettle lake within eight miles of the campus, is available for environmental research.

Two Houghton programs emphasize Christian stewardship of the creation as well as environmental awareness and analysis. The BA/BS major in biology with environmental emphasis prepares students for careers in environmental education, research and analysis, and further study in graduate program. Field-oriented courses complement a strong biology background, including at least one course at AuSable Institute of Environmental Studies (see off-campus programs section), a center for Christian environmental stewardship. The environmental stewardship minor (see Environmental Science) for science and non-science majors provides background for responsible stewardship. Required courses include Environmental Earth Science, Local Flora or Wildlife Biology, Natural Resource Management, and Writing about Nature and the Environment. A senior seminar offers exposure to environmental leaders at the local, state, and national level.

For further information on the biology programs, contact Professor James Wolfe.

Biology with Environmental Emphasis, BA (26 hours in major; 15 co-requisites):

Required (26) which must include:

BIOL 251 Genetics	4
BIOL 281 Introduction to Research	1
BIOL 301 Field Botany	4
BIOL 322 General Ecology	4
BIOL 482 Senior Seminar	1
BIOL xxx At least one course with zoological emphasis	4
Field experience requirement fulfilled by:	
a) at least one biology course at the AuSable Institute of Environmental Studies (max. 8 hours), or	
b) field course (4) at another accredited institution, or	
c) significant intern or work experience	

Co-requisites (15):

CHEM 151, 152	8
ESCI 101 Physical Geology	4
ESCI 212 Environmental Earth Science (offered on demand)	3

Recommended courses include the following:

SOC 309 Statistics	3
CSCI 151 Computer Science I	3
REC 401 National Resource Management	3

Biology with Environmental Emphasis, BS (26 hours in major; 35 co-requisites):

Required (26): see BA above

Co-requisites (35):

MATH 181 Calculus I	4
CHEM 151, 152 General Chemistry I, II	8
CHEM 241, 242 Organic Chemistry	8
ESCI 101 Physical Geology	4
ESCI 212 Environmental Earth Science (offered on demand)	3
PHYS 151, 152 General Physics I, II.....	8

Recommended courses: see BA above

The BA or BS in biology with environmental emphasis prepares students for careers in environmental education, analysis, and research. Students can take the New York State civil service exam for application as a conservation biologist to the NYS Department of Environmental Conservation.

Biologist (wildlife) (18 hours required)

BIOL 105 Conservation Biology (4)
BIOL 214 Wildlife Biology (3)
BIOL 364 Animal Ecology (4)
BIOL xxx Special Topics: Ornithology (4)
BIOL 211 Ecology of Alaska (4)
REC 401 Natural Resources Management (3)

Biologist (ecology) (18 hours required)

BIOL 151 General Biology (4)
BIOL 364 Animal Ecology (4)
BIOL 301 Field Botany (4)
BIOL 350 Forest Ecology (4)
BIOL xxx Special Topics: Limnology (4)
BIOL 211 Ecology of Alaska (4)
BIOL 220 Biological Oceanography (2)

Biology minor: (12 hours above BIOL 151, 152)

Course Descriptions

BIOL 103 Fundamentals of Biology

(4, F&S)

Principles of biological structure and function, particularly as they relate to man. Fulfills the liberal arts laboratory science requirement for non-majors. Three lecture, three laboratory hours each week.

BIOL 105 Conservation Biology

(4, F)

Principles of conservation biology including history of conservation, structure of aquatic and terrestrial ecosystems, endangered species and extinction, management, and Christian stewardship. Labs emphasize analysis of aquatic and terrestrial ecosystems. Three lectures, three laboratories each week.

BIOL 151, 152 General Biology

(4/4, F/S)

Two-semester survey; preparation for advanced work. 151 includes cell biology, genetics, animal taxonomy, behavior, and development; 152 includes plant taxonomy and physiology, ecology, and animal

physiology. Three lecture, 3 laboratory hours each week. Note: BIOL 151 or permission is prerequisite to BIOL 152. BIOL 151 and 152 are prerequisites for most biology courses numbered above 200.

BIOL 207 or 212 Wildlife Behavior in East Africa (3 or 4, S)
(See course description in Off-Campus Programs - Tanzania section.)

BIOL 211 The Ecology of Alaska (3 or 4, Summer 05)
Study of Alaskan ecology through field experiences to Anchorage, Denali National Park, State Museum at Fairbanks, Tetlin Wildlife Refuge, Valdez, Kenai Fjords National Park, and Homer. Research paper on Alaska ecology and a daily journal required. Est. fee above tuition \$1500. Prerequisite: BIOL 152

BIOL 213, 225 Natural History of the Adirondacks (3 or 4, F)
(See course description in Off-Campus Programs - Adirondack Park section.)

BIOL 214 Wildlife Biology (3, S)
Study of North American wildlife with emphasis on vertebrate game animals. Topics include ecology, behavior, population dynamics, habitat development, conservation, and management. *May not be used toward the biology major or minor.*

BIOL 215 Local Flora and Vegetation (3, F)
Field identification of local ferns, shrubs, trees, and herbaceous flowering plants. Lecture covers broader vegetational ecosystems of North America. Small herbarium required. Two lecture, three laboratory hours each week. *May not be used toward the biology major or minor.*

BIOL 217 Human Anatomy and Physiology I (4, F)
Systematic study of structure and function of the human organism, including microanatomy of organs. General organization of the body, basic tissues, and the integumentary, skeletal, muscular, and nervous systems. Three lecture, three laboratory hours each week. *Does not count for major or minor credit except where required for graduate programs and upon permission of the department chair.*

BIOL 218 Human Anatomy and Physiology II (4, S)
Sequel to BIOL 217. Endocrine, cardiovascular, lymphatic, respiratory, digestive, urinary, reproductive systems; acid-base and fluid-electrolyte balance. Prerequisite: BIOL 217 or permission. Three lecture, three laboratory hours each week. Note: BIOL 217 and 218 are designed to fulfill the certification requirements for the physical education major and admission requirement for some schools of nursing and physical therapy. *Does not count for major or minor credit except where required for graduate programs and upon permission of the department chair.*

BIOL 220 Biological Oceanography (2, OD)
Laboratory adjacent to Acadia National Park, Maine. Course includes adaptations of marine organisms to the marine ecosystems, biogeochemical cycles, stewardship of the marine environment. Field trips include rocky intertidal, cobble and sandy beaches, salt marshes, open ocean ecosystems. Cost above tuition and lab fee: \$600.

BIOL 221 Plant Anatomy and Physiology (4, OD)
Study of the biochemistry, physiology, structure, reproduction and commercial uses of the green plants and fungi. Laboratory includes research project in plant biology. Three lecture, three lab hours weekly.

BIOL 231 Comparative Vertebrate Anatomy (4, S04)
Comparative study of vertebrate structure. Laboratory includes dissection and detailed study of representative vertebrates. Two lecture, six laboratory hours each week.

BIOL 242 Microbiology (4, F03)
Survey of viruses, prokaryotic organisms, and fungi with theoretical and applied approaches to morphology, metabolism, genetics, biotechnology, and host-parasite relations. Three lectures, three laboratory hours each week. Prerequisite: CHEM 151 or permission

BIOL 251 Genetics (4, F)
Principles of inheritance in living organisms, including the modern concepts of "gene" action and DNA structure and function. Three lecture, three laboratory hours each week.

BIOL 281 Introduction to Research (1, F/S)
Introduction to biological research methods, selection and approval of a research topic, preparation of a comprehensive literature review, and submission of a formal written proposal. Required of all biology majors; recommended for junior year.

BIOL 301 Field Botany (4, F)
Introduction to taxonomy, systematics, and ecology of vascular plants. Course includes field trips throughout western New York and northwestern Pennsylvania; plant identification and classification; develop extensive herbarium. Two lecture, six laboratory hours each week.

- BIOL 322 General Ecology** (4, F)
Study of the interrelationships among living organisms, their physical and biological environment, and human impacts. Laboratory introduction to ecological techniques and field studies of local and state ecosystems. Three lecture, three laboratory hours each week.
- BIOL 350 Forest Ecology** (4, Mayterm '04)
Study of forests and their interactions with physical, chemical, and biological factors in the context of ecosystems at the Star Lake Campus. Includes physiognomy, nutrient cycling, climatic factors, soils, fire and disturbance, succession, and harvesting and management. Lab includes forest mensuration and analysis and introduction to SILVAH. Three lecture, three laboratory hours each week. Prerequisites: BIOL 322 or 301.
- BIOL 361 Vertebrate Histology** (4, S04)
Microscopic anatomy of vertebrate tissues and organs. Two lecture, six laboratory hours each week.
- BIOL 364 Animal Ecology** (4, S05)
Focuses on the relationship between animals and their environments including basic principles, theory, applications, and Christian stewardship as applied to animal ecology. Lab is field oriented including telemetry and tracking, demographics, niche partitioning, foraging strategies, and habitat selection. Three lecture, three lab hours per week. Prerequisites: BIOL 151, 152 and 322
- BIOL 365 Immunology** (4, F05)
Theoretical and clinical approaches to study of innate and adaptive immune systems: antigen recognition, immune response, immune system, and its pathologies. Three lectures, three lab hours each week.
- BIOL 370 Molecular and Cell Biology** (4, F)
The course provides an introduction to the biochemistry of cells, transport across membranes, cell-to-cell signaling, organelle function, and protein targeting, with an emphasis on methods in molecular and cell biology. Three lecture hours and one three-hour lab per week. Labs will focus on molecular techniques such as cloning, PCR, generation and purification of recombinant proteins, and blotting techniques (DNA, RNA, and Protein). Prerequisite: BIOL 251
- BIOL 372 Comparative Animal Physiology** (4, S04)
General consideration of functional processes in animals with emphasis on the comparative aspects. Three lecture, three laboratory hours each week.
- BIOL 382 Developmental Biology** (4, S05)
Study of morphogenesis and biochemical processes involved in development, with emphasis on vertebrates. Three lecture, three laboratory hours each week. Prerequisite: BIOL 251
- BIOL 195, 295, 395, 396 Special Topics** (1-4, F&S)
Courses designed to meet the individual needs of advanced students in such areas as electron microscopy, introduction to clinical medicine, marine biology, microscopical techniques, medical terminology, limnology and ornithology. Some of the courses include laboratory.
- BIOL 482 Senior Seminar** (1, S)
Discussions on history of biological science, ethical problems in biology and health related issues, and environmental issues. Each student presents a seminar to the entire department during the fall or spring of their senior year. Required of all biology majors during their final spring semester. Open only to majors.
- BIOL 391, -2; 491, -2 Independent Study** (1, 2, or 3)
Research under the supervision of a biology department faculty member. Total 5 credits.
- BIOL 475 Environmental Stewardship Seminar** (1, OD)
The course focuses on examining environmental issues and problems in light of the Christian faith with the goal of developing a personal stewardship ethic. Beginning with local environmental problems, and then moving to global issues and ethics. Outside speakers from the larger community, including representatives from the NYDEC, the Nature Conservancy, and local politicians.
- BIOL 496 Honors in Biology** (3)
- PRPR 202A Premedical-Predental Practicum (P/U)** (3, May)
Observation and practical experience with physician or dentist on a one-to-one basis. Preparation and sharing of experiences on the Houghton campus. Open only to serious medical or dental school candidates.

BUSINESS ADMINISTRATION (major and minor)

Department of Business and Economics: Kenneth Bates, chair

Faculty: Stephen B. Alderman, Kenneth J. Bates, Robert A. Black, Jonathan E. Bradshaw, Richard A. Halberg, Jeffrey R. Moore

Website and e-mail: www.businessathoughton.com, business@houghton.edu

Mission: To develop Christ-like scholar-servants to serve the people and manage the resources of corporations, small businesses, not-for-profit organizations, and churches.

Major (BS): (34 hours; 8 in pre-co-requisites)..

Courses for major but without major credit:	
BADM 140 Business Software Applications	2
ECON 210, 211 Principles of Micro and Macroeconomics	3, 3
Prerequisite total:	8
Major core courses:	
ACCT 211, 212 Accounting Principles	6
BADM 212 Principles of Management	3
BADM 213 Business Law I	3
BADM 218 Marketing Principles	3
BADM 309 Statistics	3
BADM 406 Financial Management	3
BADM 417 Business Strategy and Policy	3
BADM 481 Senior Seminar	1
Total:	25
Elective major credit courses:	
Business, accounting, or economics courses numbered 200 or above	9
Total:	42

Elective hours may be used to develop a concentration in any of the following six areas with the required courses as indicated.

Management (any 2):

- BADM 301 Business Communication
- BADM 314 Human Resources Management
- BADM 320 Leadership Development
- BADM 330 Operations Management

Marketing (2):

- BADM 312 Advertising Principles **and**
- BADM 301 Business Communication **or**
- BADM 319 Marketing Research **or**
- BADM 340 eCommerce

Finance (2):

- BADM 302 Investment Management
- ECON 301 Money and Banking

Economics (2):

- ECON 212 International Economics
- ECON 301 Money and Banking
- ECON 315 Managerial Economics

International Business:

- IBI 331, 339, 350, 390 International Business Institute **or**
- ECON 212 International Economics
- BADM 313 International Business
an approved cross-cultural experience

International Economics (2):

- ECON 212 International Economics
- ECON 237 Comparative Economics

Minor: A minor in business administration requires the following courses in addition to Business Software Applications (BADM 140) and Principles of Micro or Macroeconomics (ECON 210 or 211).

Required:

ACCT 211 Accounting Principles	3
BADM 212 Principles of Management	3
Plus 6 hours in business courses numbered 200 or above	6

Computer Use Competency Requirements

All students majoring in any program of the Department of Business & Economics must meet a set of computer use competency requirements. Spreadsheet competency is also a prerequisite for certain courses such as ACCT 211 *Accounting Principles II*, BADM 309 *Statistics*, BADM 406 *Financial Management*, and BADM 417 *Business Strategy & Policy*. The required competency areas are in spreadsheets, presentation software, and database software. These may be demonstrated in a number of ways. The ways in which you may document your competencies are:

1. Satisfactory completion of a college-level course (at Houghton College or elsewhere), a major portion of which is the development of these competencies. At Houghton College BADM 140 *Business Software Applications* meets this requirement.
2. Satisfactory completion of a non-college level training course in the use of such software, which requires at least eight hours of instruction in each area and is evidenced by a certificate or other written documentation, copies of which must be provided to Houghton College.
3. Satisfactory completion of the Houghton College competency examination on the use of these software applications. A sample exam is available for those who wish to pursue this option. (This option is recommended for part-time students and others for whom registration for BADM140 *Business Software Applications* would require an additional tuition charge.)
4. A letter on company letterhead from your employer attesting to your proficiency with Microsoft Excel® in the specific areas and topics covered in BADM140 *Business Software Applications*.

Course Descriptions

BADM 103 Business Fundamentals (3, F03)
Business operation, terminology, practices, and career opportunities. This is a survey course that is designed to give those interested in the business discipline an overview of what business is all about.

BADM 140 Business Software Applications (3, F&S)
Development of Microsoft Office skills in Excel, Access, and PowerPoint. Students will learn how to use their skills in solving real business problems.

BADM 145 Website Development (1, F&S)
Introduction to hosting/managing a Website as well as developing Web pages using Microsoft Front-Page. Students will work in a team to complete a service-learning project.

ACCT 211 Accounting Principles I (3, F&S)
(See description under accounting section.)

ACCT 212 Accounting Principles II (3, F&S)
(See description under accounting section.)

BADM 212 Principles of Management (CDRP, see Foreign Languages) (3, F&S)
Familiarizes students with the knowledge, roles, responsibilities, and skills required of new managers. Special attention is given to managerial decision-making, problem-solving, information, and human resources issues.

BADM 213 Business Law I (3, F)
Basic law covering contracts, agency, bailments, and negotiable instruments.

BADM 214 Business Law II (3, S05)
Basic law covering forms of business organization, sales, estates, bankruptcy. Prerequisite: BADM 213

BADM 218 Marketing Principles (CDRP, see Foreign Language) (3, S)
Factors in product development, pricing, distribution, and promotion of consumer and industrial goods.

BADM 301 Business Communication (3, F04)
Techniques and practices in business writing and oral communication. Prerequisite: BADM 212.

BADM 302 Investment Management (3, S)
A study of stocks, bonds, mutual funds, commodities, real estate, investment analysis, and portfolio theory. Prerequisite: ACCT 211, 212 or permission

BADM 303 Entrepreneurship (3, F)
A study of entrepreneurship identifying an industry niche and the basics of starting and running a small business. Special emphasis given to business plan development.

BADM 309 Statistics (3, F&S)
Basic statistical methods such as graphs, probability, sampling, hypothesis testing, regression, correlation. Theory useful in research and interpretation of data. Prerequisite: BADM 140

BADM 312 Advertising Principles (See description under the Communication major, COMM 312.) Prerequisite: BADM 218	(3, F)
BADM 313 International Business (CDRP, see Foreign Languages) An examination of the variations in business management and practices in developed and less developed countries around the world. Prerequisites: BADM 212, ECON 110, or permission	(3, S04)
BADM 314 Human Resources Management (CDRP, see Foreign Languages) Personnel functions, relationships, employee selection, testing, training, and incentives. Prerequisite: BADM 212	(3, S)
BADM 319 Marketing Research Study of the techniques used in collection and analysis of secondary and primary data and use of that format for decision-making in marketing environment. Student teams work on real business marketing research projects. Prerequisites: BADM 309, BADM 218	(3, S04)
BADM 320 Leadership Development A study of the principles of leadership found in biblical leaders, throughout history, and in our own lives. Designed as an interdisciplinary course, specifically to help guide personal understanding both of leadership responsibilities and leadership abilities. It is not intended only for individuals who aspire to positions of leadership or just for those who think they have what are normally considered "leadership" abilities. It is intended for anyone seeking to understand how to better be able to influence others for good, regardless of their profession, position, gifts, or calling.	(3, S)
BADM 330 Operations Management Management of processes or systems that create goods or provide services. Includes the basics of forecasting, capacity planning, scheduling, inventory management, total quality management, and supply chain management. Prerequisite: ACCT 212, MATH 107 or higher, BADM 140	(3, F03)
BADM 340 eCommerce A cutting-edge course designed to give you exposure, understanding, and know-how in the ways the Internet is transforming and facilitating key functions of business. Exploration of the organizations that have succeeded and those that have failed. Understanding the eCommerce strategies companies employ. Covers the technological features that make eCommerce both possible and challenging. Implications in computer science, accounting, marketing, management, human resources, finance, economics, and international business. Prerequisite: BADM 145 or permission.	(3, S05)
BADM 406 Financial Management Financial analysis, budgeting, working capital management, capital budgeting, sources of financing, cost of capital. Prerequisite: BADM 140, ECON 110, ACCT 211, 212 or permission	(3, F)
BADM 417 Business Strategy & Policy (CDRP, see Foreign Languages) Integrates social responsibility and ethics with instruction in the strategic planning process. Ethical core values act as guidelines for development of organizational plans. (Seniors only, except by permission.) Prerequisite: BADM 140	(3, F)
BADM 421 Internship in Business Supervised experience in a business firm combining practical activities with integrating studies. By application only. (Spring offering is for two days a week only.)	(6, F; 3, S)
BADM 431 Endowment Management An advanced investment course in which students who have excelled in business, economics, and/or accounting courses manage a portion of the Houghton College stock portfolio under faculty supervision. By application only. This course may be taken multiple semesters for a maximum of two (2) credit hours toward graduation.	(.5, F&S)
BADM 481 Senior Seminar Exploration of current issues faced by management. Required of all senior business administration and accounting majors.	(1 or 2, S)
BADM 191, -2; 291, -2; 391, -2; 491, -2 Independent Study	(1, 2 or 3)
BADM 295, 395, 495 Special Topics	(1,2,3, or 4)
BADM 496 Honors in Business	(3, S)

CHEMISTRY (major and minor)

Department of Chemistry: Irmgard Howard, chair

Faculty: Larry Christensen, Irmgard Howard, Bernard Piersma Part-time: David Schwert

Major BS: (41 hours in the major, 19 in co-requisites)

Major BA: (35 hours in the major, 19 in co-requisites)

Major (BS): The major in chemistry designed for preparation for professional employment or for graduate work culminates in the bachelor of science in chemistry.

Required courses:

CHEM 151, 152 General Chemistry	8
CHEM 241, 242 Organic Chemistry	8
CHEM 277 Analytical Chemistry	4
CHEM 278 Chemical Instrumentation	4
CHEM 286 Special Topics	2
CHEM 361, 362 Physical Chemistry	8
CHEM 482 Chemistry Seminar	1

Additional 6 hours in chemistry selected from courses numbered above 300, excluding chemistry projects, independent study, or honors.

Co-requisites:

PHYS 151, 152 General Physics.....	8
MATH 181, 182 Calculus I/II.....	8
MATH 241 Differential Equations or	
MATH 321 Multivariate Calculus	3

Recommended:

CSCI 151 Computer Science I.....	3
MATH 321 Multivariate Calculus	3

Major (BA): The major in chemistry designed for preparation for medical school or for secondary teaching culminates in the bachelor of arts in chemistry.

Required courses:

CHEM 151, 152 General Chemistry	8
CHEM 241, 242 Organic Chemistry	8
CHEM 277 Analytical Chemistry	4
CHEM 278 Chemical Instrumentation	4
CHEM 286 Special Topics	2
CHEM 361, 362 Physical Chemistry	8
CHEM 482 Chemistry Seminar	1

Co-requisites:

PHYS 151, 152 General Physics.....	8
MATH 181, 182 Calculus I/II.....	8
MATH 241 Differential Equations or	
MATH 321 Multivariate Calculus	3

Minor: (12 hours above 152)

These hours may be taken in one of two ways: Organic Chemistry (CHEM 241, 242), and Analytical Chemistry (CHEM 277), or Organic Chemistry (CHEM 241, 242), Biochemistry (CHEM 332), and Bioanalytical Laboratory (CHEM 334).

Course Descriptions

CHEM 113 Elements of Biochemistry (4, OD)

Forms and functions of chemicals in life. Fundamentals of inorganic, organic, and biological chemistry with contemporary applications. Fulfills the liberal arts laboratory science requirement for non-science majors. Also designed for pre-nursing students. Three lecture, three laboratory hours per week.

CHEM 121 Impact: Science on Society (3, S)

Interrelationships between science, modern society, and Christianity. Nature and limitations of science. Political and social decisions with a scientific component. In-depth analysis of several areas where science plays a critical role in contemporary life. Fulfills the three-hour integrative studies science requirement.

CHEM 151 General Chemistry I (4, F)

Theories and principles of modern chemistry: stoichiometry, atomic theory and structure, bonding, properties of matter, descriptive chemistry of some important elements. Laboratory devoted to synthesis, analysis, and experiments based upon principles developed in lecture. Three lecture, three

laboratory hours per week.

- CHEM 152 General Chemistry II** (4, S)
Continuation of CHEM 151; description and control of chemical reactions (equilibrium, thermodynamics, kinetics, electrochemistry, etc.) Laboratory devoted to qualitative analysis or student-designed research projects. Three lecture, three laboratory hours per week.
- CHEM 207 Introduction to Nutrition** (3, F&S)
Digestion, metabolism, nutrition of normal individuals. Essentials of adequate diets and food sources of nutrients; nutritional comparison of food in relation to normal and modified diets.
- CHEM 208 Intro to Nutrition Laboratory** (1, F)
This laboratory is designed to parallel the structure of CHEM 207, demonstrating at a hands-on level the components, concepts, and stewardship of contemporary nutrition. Three lab hours per week.
- CHEM 221 Contemporary Organic Chemistry** (4, OD)
For pre-nursing, pre-medical technology, BA biology, and general science majors. Fundamentals of organic chemistry; emphasis on structure, reactions, properties of organic molecules. Three lecture, three laboratory hours per week. Prerequisite: CHEM 151 or CHEM 113
- CHEM 241, 242 Organic Chemistry** (4/4, F/S)
Modern organic chemistry: relationships between organic molecular structure and chemical reactivity; mechanisms of molecular transformations; synthesis and spectroscopy. Three lecture, four laboratory hours per week. (CHEM 241 must precede 242.) Prerequisite: CHEM 152
- CHEM 277 Analytical Chemistry** (4, F)
Principles of gravimetric, volumetric, and electroanalytical methods of analysis. Acid base, precipitation, complexometric, redox titrimetry. Quantitative methods based on absorption of radiation. Statistical treatment of data. Laboratory: analysis of unknown samples. Two lecture, eight laboratory hours per week. Prerequisite: CHEM 152
- CHEM 278 Chemical Instrumentation** (4, S)
Instrumental methods of analysis. Principles and application of various types of spectroscopy (including UV-VIS, IR, NMR), atomic absorption and emission, mass spectrometry, thermal and electrochemical methods of analysis, etc. Two lecture, eight laboratory hours per week. Prerequisite: CHEM 277
- CHEM 286 Special Topics in Chemistry** (2, F)
An introduction to areas of chemistry not treated in other courses. Topics will vary yearly; consult the department for the topic offered in any given year. Prerequisite: CHEM 241
- CHEM 332 Biochemistry** (3, S03)
Structures, functions, and metabolic relationships of representative compounds involved in life processes; brief introduction to enzymology, inborn errors, regulation of metabolism, nutritional implications, clinical applications. Prerequisite: CHEM 221 or CHEM 241
- CHEM 334 Bioanalytical Laboratory** (1, S03)
The practice of analytical chemistry as applied to biochemical systems. Qualitative and quantitative laboratory experience in gravimetric, volumetric, potentiometric, and spectrometric techniques.
- CHEM 343 Advanced Organic Chemistry** (3, F02)
Theoretical and physical organic chemistry. Interrelationship of structure and reactivity; dynamics of organic reactions; methods of synthesis; current topics of special importance to organic chemistry and introduction to current original publications in organic chemistry.
- CHEM 361, 362 Physical Chemistry** (4/4, F/S)
Theoretical aspects of principles of chemistry: derivation and application, with emphasis on thermodynamics, kinetics, and molecular structure. Practical applications in laboratory. Three lecture, four laboratory hours per week. (CHEM 361 must precede CHEM 362.) Prerequisites: PHYS 151, 152; CHEM 242, 277, 278 (may be taken without 278, if not taken for major credit); MATH 241 or MATH 321
- CHEM 281, 282, 381, 382 Chemistry Projects** (1 or 2, F&S)
Selected problems in experimental chemistry to acquaint the student with current literature coupled with laboratory techniques. Prerequisite: permission.
- CHEM 453 Advanced Inorganic Chemistry** (3, F01)
Theories of atomic and molecular structure, bonding; emphasis on organometallic chemistry; descriptive chemistry of the elements; current topics of special importance. Prerequisite: CHEM 277
- CHEM 482 Chemistry Seminar** (1, S)
Journal reports and discussion of recent developments in chemistry. Required of all chemistry majors.
- CHEM 391, 392; 491, 492 Independent Study** (1-3, Arr)
CHEM 496 Honors in Chemistry (3)

CHRISTIAN EDUCATION (see Educational Ministries)

CHRISTIAN MINISTRIES (AAS) (Also, see ministry)

Department of Religion and Philosophy: Harold Kingdon, chair

Faculty: Under the direction of the department chair

The Christian ministries curriculum is a two-year program which leads to the associate of applied science degree. The course requires a total of 62 hours and provides a strong Bible-centered preparation for Christian service in the church or mission field.

The curriculum consists of 22 hours in integrative studies requirements, 25 hours in required religion courses, and a 12- to 16-hour concentration in communication, religion, educational ministries, or applied social science. Additional credit hours to total 62 will consist of electives.

The integrative studies requirements include three hours each of Bible (Biblical Literature), math or science, principles of writing, social science, philosophy, and theology.

The required religion courses are:

- 6 hours of Bible: Old Testament
- 6 hours of Bible: New Testament
- 3 hours of missions
- 6 hours of educational ministries
- 4 hours of internship

(See respective course descriptions in Bible, Missions, and Educational Ministry.)

Course Description

CHMN 251, 252 Internship

(2/2, F/S)

A field experience in a church or a church-related organization during the student's second year or during Mayterm.

CHURCH MINISTRIES (major)

The **church ministries** curriculum, resulting in a BS degree, is recommended for those who desire to combine a major in Bible or educational ministries with a 37-hour concentration in music. This program will equip the student for varied service in the small church. **See Music.**

COMMUNICATION (major and minor)

Department of English and Communication: Douglas Gaerte, chair

Faculty: Bruce Brenneman, Douglas Gaerte, Roger Rozendal

Major: (33 hours)

Whether one seeks a career in broadcasting, journalism, public relations, advertising, government service, law, business, teaching, or the ministry, the ability to communicate is essential. The communication major is an interdisciplinary program in the composition and rhetoric of oral and written discourse, examined theoretically and in various practical contexts.

Required courses:	18
Introduction to Communication Theory (COMM 205)	
Public Speaking (COMM 210)	
(also satisfies the integrative studies communication requirement)	
Advanced Composition: Rhetorical Patterns (WRIT 212)	
Rhetorical Strategy (COMM 316)	
Interpersonal Communication (COMM 315) and	
Seminar in Public Communication (COMM 417)	
Additional electives from:	15
Introduction to Mass Media (COMM 214)	
Organizational Communication (COMM 216)	
Debate (COMM 217)	
Oral Interpretation (COMM 219)	

Readers Theatre (COMM 244)
 Theater Arts (COMM 245)
 Television Programming and Production I, II (COMM 251, 351)
 Radio Programming and Performance (COMM 252)
 Advertising Principles (COMM 312)
 Public Relations Principles (COMM 313)
 Copywriting (COMM 314)
 Special Topics in Communication (COMM 320)
 Cross-Cultural Communication (COMM 325)
 Conflict Management (COMM 330)
 Broadcast Journalism (COMM 350)
 Independent Study in Communication (COMM 291, 391 or 491)
 Periodical Writing (WRIT 303)
 Creative Nonfiction: Writing about Nature, Landscape, etc. (WRIT 306)
 Creative Nonfiction: Writing about Spiritual Experience (WRIT 307)
 Creative Nonfiction: Writing about Cultural Issues (WRIT 308)

(Note: Students who anticipate participating in an off-campus cross-cultural experience must coordinate the trip with respect to major requirements. For example, students planning to participate in Houghton-in-London during the fall of their senior year must take both Rhetorical Strategy (COMM 316) and Seminar in Interpersonal Communication (COMM 415) in the fall of their junior year.

Minor: (15 hours)

These hours include Introduction to Communication Theory (COMM 205) and Public Speaking (COMM 210). Nine additional hours are selected from any of the communication courses listed above under the major or WRIT 212, 303, 306, 307, or 308.

Communication Minor: Theater Emphasis (15 hours)

This is designed for students interested in the performing arts. This cross-disciplinary minor is intended to provide the student with experience in a variety of dramatic formats. The minor may only be taken by contract with the English and Communication Department chair. Required courses are Public Speaking (COMM 210), Oral Interpretation (COMM 219), Theater Arts (COMM 245), and Readers Theater (COMM 244). One additional option (selected by contract agreement) might be Creative Dramatics (EDUC 310), Opera Workshop (MUS 353), Modern Drama (ENGL 315), or Shakespeare (ENGL 413). Strongly recommended in addition to the above 15 hours is an individualized project (such as assistant director of a college production) listed under Theater Workshop (COMM 246) or Independent Study (COMM 291). *Note: Only eight hours of Theater Workshop may count toward graduation.*

Course Descriptions

COMM 101 Fundamentals of Speech (2, F&S)
 Studies in the basic concepts of effective communication. Emphases on presentational speaking skills, organization of information, use of evidence, and audience analysis. Deliver demonstrative, informational, and persuasive speeches. Satisfies Integrative Studies speech requirement.

COMM 205 Introduction to Communication Theory (3, S)
 This course provides a foundation for subsequent communication courses by introducing the major theories that help to explain human communication behavior. The course encourages students to see theorizing as both a formal, systematic approach to learning and as an informal activity in which we all engage. Through practical application, the course emphasizes the understanding, evaluation, and use of communication theories in daily life.

COMM 210 Public Speaking (3, F&S)
 The preparation and delivery of various kinds of public speeches such as the journalistic report, the demonstration speech, the special occasion speech, and the problem solving presentation. Emphases on content, structure, and delivery. Satisfies the first level Integrative Studies speech requirement.

WRIT 212 Advanced Composition: Rhetorical Patterns (3, F&S)
 (See course description under writing major.)

COMM 214 Introduction to Mass Media (3, F)
 Overview of the mass communication process and its application to mass media. Considers history, technological development, social implications, business functions, and legal aspects of mass media.

COMM 216 Organizational Communication (3, F&S)
 Development of communication skills applicable within organizations: understanding communication channels, interviewing strategies, task-oriented groups, business and sales presentations, conducting effective meetings, conflict management. Satisfies the Integrative Studies speech requirement.

- COMM 217 Debate** (3, S)
A performance course in argumentation and debate. Emphasis on evidence and reasoning, affirmative and negative case construction, refutation and rebuttal, and extemporaneous delivery. Recommended for pre-law and pre-ministerial students.
- COMM 219 Oral Interpretation** (3, S or M)
Workshop in oral interpretation of literature. Emphasis on the selection and analysis of a literary work in preparation for presentation. Development of vocal skills for reading texts in a variety of literary genres.
- COMM 244 Readers Theater** (3, S or M)
An introduction to the dramatic format called Readers Theater. Emphasis on the analysis of literature and its adaptation into a form that can be presented by a group of readers. Literature formats include prose, poetry, scripture, and children's lit. Development of performance skills.
- COMM 245 Theatre Arts** (3, S)
Beginning acting, basic mime, introduction to stage techniques. Opportunity for practical experience in class production. Brief survey of Western theatre.
- COMM 246 Theatre Workshop** (1 or 2, F&S)
Practical work on major productions. Credit given according to degree of responsibility and amount of time spent on specific tasks. For advanced students. Instructor's permission required. Note: repeatable up to 8 hours.
- COMM 251 Television Programming and Production I** (3, F)
A workshop designed to develop an understanding of basic television production and the programming of entertainment, news, and advertising.
- COMM 252 Radio Programming and Performance** (3, S)
Principles and practice of programming and performance within various formats. Considers social and business/ratings implications of programming. Requires weekly on-air shift on college radio station.
- COMM 312 Advertising Principles** (3,F)
Overview of the advertising field and how it functions in society. Studies research, strategies, methods, creativity, and media planning. Typically includes case study.
- COMM 313 Public Relations Principles** (3,S)
Brief overview of the public relations field and how it functions in society. Considers public relations to be a communication management function. Proceeds to study research, strategies, methods, and relationships with various publics.
- COMM 314 Copywriting**(3, S)
Principles of copywriting including various strategies used for creating commercial copy. Includes writing radio and television commercials and public service announcements, newspaper and magazine headlines and body copy, institutional advertisements, press releases, direct mail, and others. Typically includes a service learning component - writing copy for area organizations and businesses.
- COMM 315 Interpersonal Communication** (3, F)
Principles, application of interpersonal skills in the context of friendships and families. Includes personal and relational awareness, person perception, verbal and nonverbal communication, relational development, and gender communication.
- COMM 316 Rhetorical Strategy** (3, S)
The preparation and delivery of various kinds of persuasive speeches including problem analysis, policy justification, policy rejection, and hostile audience. Emphasis on content, structure, and delivery. Elements include argumentative support, audience analysis, decision-making, motivational support, attention getting, and effective closure. Prerequisite: COMM 210 plus junior or senior status.
- COMM 320 Special Topics in Communication** (2 or 3, F&S)
Opportunity for study of issues and problems not covered elsewhere in the curriculum.
- COMM 325 Cross-Cultural Communication** (3, F)
Theory and practice in communication across cultural boundaries. Recommended for those with an interest in international vocations.
- COMM 330 Conflict Management** (3, S04, F)
An introduction to conflict management that balances coverage of major theories with practice in communication skills and conflict intervention techniques (e.g., assertiveness training, mediation, negotiation). Focus on experiential learning, with heavy emphasis on written analysis that includes analytical journaling and analysis of scientific journal articles.

COMM 350 Broadcast Journalism	(3, OD)
Advanced course in radio and television journalism: writing, announcing, production techniques in intensive workshop experience. Students are strongly encouraged to take COMM 251 prior to this course.	
COMM 351 Television Programming and Production II	(3, F)
See course description above for COMM 251. Instructor's permission required.	
COMM 353 Communication Internship	(1-3, F, S, Summer)
Experience in an applied communication field. Program tailored to individual student's needs and interests.	
COMM 417 Seminar in Public Communication	(3, S)
Analysis of specific public communication situations, such as social reform movements, political discourse, campaign rhetoric, war rhetoric, the documentary, and the role of media in shaping discourse in contemporary society. Prerequisite: COMM 205.	
COMM 291, -2, 391, -2, 491, -2 Independent Study	(1, 2, or 3, F&S)
COMM 496 Honors in Communication	(3, S)
WRIT 303 Periodical Writing	(3, S)
(See course description under writing major.)	
WRIT 306 Creative Nonfiction: Writing about Nature, Landscape, and the Environment	(3, S)
(See course description under writing major.)	
WRIT 307 Creative Nonfiction: Writing about Spiritual Experience	(3, F)
(See course description under writing major.)	
WRIT 308 Creative Nonfiction: Writing about Cultural Issues	(3, F)
(See course description under writing major.)	

COMPUTATIONAL PHYSICS (major)

Department of Physics and Earth Science: Mark Yuly, chair

Faculty: Ronald Rohe, Mark Yuly

Computational Physics Major (BS): (31 hours in major; 16 in prerequisites; 10 in co-requisites)

General Information: Traditionally, the study of physics has been divided into two areas: *experimental physics*, which deals with the design of experiments and measurement, and *theoretical physics*, which deals with theoretical models and predictions. More recently a third area has gained importance, namely, *computational physics*, which involves the use of computers in modeling and analyzing complex systems. This major is available to those students interested in studying physics with an emphasis on the use of computers. It provides students with highly sought-after computer and problem solving skills in a growing area of interdisciplinary study.

The requirements for the computational physics major are as follows:

Prerequisites (16):		
PHYS 151,152	General Physics I, II	8
MATH181,182 Calculus I, II	8
Required (30) which must include:		
PHYS 251	Mechanics I	3
PHYS 212	Modern Physics	3
PHYS 353	Electricity and Magnetism I.....	3
PHYS 355	Thermal Physics	3
PHYS 471,472	Physics Project Lab.....	2
PHYS 482	Physics Seminar.....	1
CSCI 211	Programming I	3
CSCI 218	Programming II	3
CSCI 236	Data Structures and Algorithms	3
MATH 331	Numerical Analysis	3
One advanced theory course selected from:		
PHYS 352	Mechanics II	3
PHYS 354	Electricity and Magnetism II	3
PHYS 356	Quantum Mechanics.....	3
Co-requisites (10):		
MATH 241	Differential Equations.....	3
MATH 321	Multivariate Calculus	3

MATH 261	Linear Algebra	4
Additional recommended supporting courses include:		
PHYS 258	Analog Electronics	4
PHYS 259	Digital Electronics	4
CSCI 226	Computer Architecture	3
CSCI 245	Systems Analysis and Design.....	3

COMPUTER SCIENCE (major and minor)

Department of Mathematics and Computer Science: Richard Jacobson, chair
Faculty: Wei Hu

Major: (34 hours; 11 in co-requisites)

Major required courses:	
CSCI 211 Programming I.....	3
CSCI 218 Programming II.....	3
CSCI 214 Discrete Math.....	3
CSCI 226 Computer Architecture	3
CSCI 236 Data Structures and Algorithms.....	3
CSCI 245 Software Engineering	3
CSCI 326 Operating Systems.....	3
CSCI 340 Databases	3
CSCI 420 Networking	3
CSCI 480 Senior Seminar	2
Two elective CSCI courses	5
Total:	34

The requirements also include Calculus II and either Linear Algebra or Numerical Analysis. Calc I is a prerequisite.

Minor in Computer Science: (15 hours)

Required courses:	
CSCI 211 Programming I.....	3
CSCI 218 Programming II.....	3
CSCI 226 Computer Architecture	3
CSCI 236 Data Structures and Algorithms	3
One elective CSCI course	3
Total:	15

Minor in Information Technology: (15 hours)

Required courses:	
CSCI 211 Programming I.....	3
CSCI 218 Programming II.....	3
CSCI 331 Web Programming.....	3
CSCI 340 Databases	3
One elective CSCI course	3
Total:	15

This Computer Science major emphasizes the theoretical foundations and application techniques for solving problems in today's technological environment. It is a necessary preparation for those that plan to create the technology of tomorrow whether in the pursuit of graduate study or in information management leadership positions in business, industry, or government. This major provides the flexibility to be tailored to the student's particular career interests. The Senior Project provides an opportunity to gain valuable pre-graduation experience while working with current computer theories and applications. It is this flexibility and the broad exposure to computer concepts, together with a Liberal Arts education, that has been appreciated by and will continue to appeal to employers of computer professionals.

Course Descriptions

CSCI 211 Programming I (3, F)

This course covers the fundamentals of object-oriented programming utilizing the Java programming language. This first programming course provides students with basic Java programming concepts, data types, operators, flow control statements, objects, classes, methods, arrays, strings, applications, applets, and graphics user interfaces.

CSCI 218 Programming II

(3, S)

This course extends the concepts learned in Programming I. It covers some advanced features of Java

including advanced graphical user interfaces, exceptions, threads, graphics, multimedia, input/output, and networking. Prerequisite: CSCI 211

CSCI 214 Discrete Mathematics (3, F03, 05)
Topics include: sets, functions, relations (incl. Partial order), methods of propositional logic, introduction to predicate logic, counting, recurrence relations, asymptotic analysis, proof (incl. Induction), introduction to probability, and graphs.

CSCI 226 Computer Architecture (3, S04, 06)
Structure and internal organization of digital computers. Machine language and assembly language, representation of numbers, CPU organization, subroutines and linkage. Prerequisite: CSCI 211 or equivalent proficiency

CSCI 236 Data Structures and Algorithms (3, F)
This course covers the fundamental data structures of computer science and accompanying algorithms. Linked Lists, Stacks, Queues, Binary Trees, Priority Queues, Heaps and other ADTs will be included. Classical sorting and searching algorithms will be learned and implemented. Prerequisite: CSCI 218

CSCI 245 Software Engineering (3, S05,07)
This course covers both a theoretical and a practical foundation in software engineering. In the theoretical part, it covers principles and methods of software engineering, including requirements, specification, design, implementation, testing, validation, operation, and maintenance. In the practical part, it covers the development of software products from an industry perspective, including generation of appropriate documents. Prerequisite CSCI 218.

CSCI 326 Operating Systems (3, F 04, 06)
A study of computer architecture at the register level. Management of the processor, memory, peripheral devices, and information. Interrelationships of architecture and operating systems. Performance evaluation. Exposure to system manager responsibilities in UNIX and Windows. Prerequisite: CSCI 226 and CSCI 236 or permission

CSCI 328 Foundations of Computing (3, F03, 05)
This course covers the introduction to the classical and contemporary theory of computation including regular, context-free, and computable (recursive) languages with finite state machines, pushdown automata, and Turing machines. It also covers the historical reasons and the need that gave rise to many different programming languages and discusses the features of the most successful and more influential of them. The similarities and the differences among procedural, functional, object-oriented, logic as well as parallel programming languages will also be covered.

CSCI 331 Web Programming (3, F04, 06)
This course covers the new programming models that are used to support Web applications. It covers software design, interface design, the development side of Web applications. It helps the students learn how to build software that accepts information from users across the Web and returns data to the user, and understand how to interact with database engines to store and retrieve information. Specific topics that are included are HTML, XML, JSP (Java Server Page) and Java servlets. Prerequisite: CSCI 218

CSCI 336 Programming III (3, S05, 07)
This course covers J2EE (Java Enterprise Edition). The topics will include how to develop n-tier applications, design various application architectures based on the J2EE platform, and enterprise technologies - JDBC, RMI, JNDI, EJB, JMS, and JINI. Prerequisite: CSCI 236

CSCI 340 Databases (3, S04, 06)
Introduction to relational databases. Fundamentals of database design and query design. Database management topics include security, integrity, and concurrency techniques. Use of relational database software (including SQL) for application projects. Topics include decision-based and object-based databases. Exposure to database manager responsibilities. Prerequisite: CSCI 218 or permission

CSCI 420 Networking (3, S05, 07)
An introduction to the basics of data communication and networking. Topics include the OSI model, physical processes used for digital transmission, standardization, local area networks, the network protocols, and network applications. Exposure to network manager responsibilities in UNIX and Windows NT. Prerequisite: CSCI 326 or permission

CSCI 425 Computer Graphics (3, F04, 06)
An introduction to graphics hardware and software. Graphics standards. Topics include two and three dimensional transformations, clipping, projection, hidden line and hidden surface algorithms. Significant laboratory component. Prerequisite: CSCI 236

CSCI 480 Computer Science Seminar (2, S)
For seniors, except by permission. Required of all Computer Science majors.

CSCI 490 Senior Project	(3, F)
The senior project allows seniors to participate in a scholarly endeavor with faculty and other students or in a formally controlled internship. This project will include at least the following three components: (1) A review of one or more scholarly papers from primary literature of computer science; (2) The writing of a significant scientific paper or substantial document to give the student experience in writing for a scientific audience; (3) An oral presentation to students and/or faculty.	
CSCI 391, -2; 491, -2 Independent Study	(1, 2 or 3)
CSCI 496 Honors in Computer Science	(3)
CSCI 295, -6; 395, -6; 495 Special Topics in Computer Science	(1,2 or 3, OD)

EARTH SCIENCE (concentration in General Science)

Department of Physics and Earth Science: Mark Yuly, chair

Faculty: Ronald Rohe, Mark Yuly

Part-time: Peter Bryant

General Information

Courses support current environmental and space interests, and lead to the concentration required for a general science major. General science majors are required to take Physical Geology (ESCI101) and another four-hour Earth Science course; an Earth Science concentration in General Science is fulfilled by adding eight more hours, including independent study.

Listed courses may be supplemented by appropriate AuSable courses (listed under Off-Campus Programs).

Course Descriptions

ESCI 101 Physical Geology (4, S)

Study of materials, structure, and dynamics of the Earth's crust. Identification of rocks and minerals; topographic map studies. Three lecture, three laboratory hours each week.

ESCI 102 General Astronomy (4, F)

Space orientation and a descriptive understanding of the solar system, our galaxy, and the universe. Current theories of cosmic origins. Three lecture, three laboratory hours each week.

ESCI 212 Environmental Earth Science (3, F)

Relationship between humans and Earth systems in the atmosphere, hydrosphere, lithosphere. Environmental problem solving. Introduction to remote sensing and GIS.

ESCI 213 Geographic Information Systems (GIS) Laboratory (1, F)

Optional laboratory to accompany Environmental Earth Science. The laboratory will focus on applications of GIS and GPS to environmental and earth science problems.

ESCI 224 Atmospheric Science (4, OD)

Comparative study of planetary atmospheres. Phenomena of Earth's atmosphere and aerospace, weather, meteorology, and climatology. Three lecture, three laboratory hours each week.

ESCI 230 Hydrology (3, OD)

A study of the properties and circulation of water on the surface of the land, underground and in the atmosphere. Topics to be covered include fluid mechanics, groundwater, wastewater, and environmental concerns. An engineering perspective will be used.

ESCI 291, 292, 391, 392, 491, 492 Independent Study (1, 2, or 3)

ESCI 295, 395, 495 Special Topics in Earth Science (1, 2, 3 or 4)

ECONOMICS (minor)

Department of Business and Economics: Kenneth Bates, chair

Faculty: Robert Black

Website and e-mail: www.businessathoughton.com, business@houghton.edu

Mission: To develop Christlike scholar-servants to serve the people and manage the resources of

corporations, small businesses, not-for-profit organizations, and churches.

Minor: (15 hours)

Economic theory provides essential background for careers in business, law, politics, teaching, and all areas of private and public administration.

Major required courses:

Principles of Micro and Macroeconomics (ECON 210, 211)	3, 3
Addn'l hours from list below numbered 200 or above	9

Course Descriptions

ECON 102 Personal Finance (2, F)

Basic understanding concerning Christian perspectives toward stewardship, including the management of money, insurance, credit, budgeting, investment, and retirement planning. Elective credit only.

ECON 210 Principles of Microeconomics (3, F)

Economic method, demand and supply, consumer and producer theory, models of product market structure, and selected topics on factor markets, public choice analysis, public expenditure, and finance.

ECON 211 Principles of Macroeconomics (3, S)

Circular flow of income and expenditure in a market economy with government, financial, and foreign sectors. Economic method, demand and supply, national income accounting, inflation, unemployment, business cycles, theories of aggregate price and output determination, fiscal and monetary policy, and the government budget.

ECON 212 International Economics (3, F04)

International trade, international finance, and government policies regarding trade and finance. Why nations trade, protectionist policies, multinationals, financing trade, exchange-rate determination, and international trade and finance in developing nations. Prerequisite: ECON 210

ECON 213 American Economic History (3, OD)

Economic and business development of the United States, colonial period to the present. May be counted toward economics minor or history major/minor.

ECON 237 Comparative Economic Systems (3, F03)

Examination of alternative economic systems; comparison of U.S. economic system with other economies along capitalist-socialist spectrum. Prerequisite: ECON 210 or permission

ECON 301 Money and Banking (3, S)

Role of money and financial institutions in a market economy, development of the U.S. monetary system, Federal Reserve System, money creation process, financial regulation and deregulation, financial innovation, and monetary theory and policy. Prerequisite.: ECON 210 and 211

ECON 302 History of Economic Thought (3, OD)

Development of modern economic thought in Europe and United States. Required for a minor. Limited to juniors and seniors. Prerequisites: ECON 210 and 211 or permission

ECON 303 Industrial Organization (3, OD)

Examination of firm behavior in theory and practice; case studies of major industries. Government policies toward business (e.g.: antitrust actions and regulation of business environment). Prerequisite: ECON 210 and 211

ECON 315 Managerial Economics (3, S)

Theories of consumer and producer behavior with emphasis on applications to public policy and management of business enterprise. Rationality of consumers, decision-making under risk with applications to insurance and investment, theory of the firm and efficient production, benefits of competition and costs of monopoly, and information and price determination. Prerequisite: ECON 210

ECON 191,- 2; 291, -2; 391, -2; 491, -2 Independent Study (1, 2 or 3)

ECON 295, 395, 495 Special Topics (1-4, OD)

Group study of selected topics.

EDUCATION (majors and minor)

Department of Education: Darlene Bressler, chair

Faculty: Darlene Bressler, Constance Finney, Cathy Freytag, Mark LaCelle-Peterson, Susan Martin, Charles Massey, Daniel Woolsey

Majors: Childhood (grades 1-6) Education (50 hours in the major; 9 in pre/co-requisites)
Adolescence (grades 7-12) Education (39-40 hours; 6 in pre/co-requisites)

General Information:

- As of spring 2003, there were 249 students (freshmen to seniors) enrolled in the education programs at Houghton College.
- Our students spend an average of 30+ hours/week student teaching for approximately 12 to 15 weeks.
- During the 2001-2002 AY, 70 Houghton College students completed education requirements for NYS certification. Of these, 58 students took the ATS-W and/or LAST and 57 (98 percent) passed. This compares favorably to the statewide passing percentage of 94 percent.

For admission to the **teacher education program**, a student must:

1. Complete the application to enter the teacher education program
2. Present a writing sample which demonstrates the ability to communicate in writing
3. Present a cumulative grade point average of 2.5 or above
4. Receive formal approval by the Teacher Education Committee.

For entry into **upper level education courses** (300 or above), a student must:

1. Have taken EDUC 201 Instructional Psychology and Research, **or** EDUC 240 Teaching in Urban America and, if the student is a childhood education major, EDUC 114 Math for Elementary Teachers
2. Present a cumulative grade point average of 2.6 or above
3. Complete the Upper Level Course Approval form and bring it to the Education Department advisor for course selection.

To be approved for **student teaching**, a student must:

1. Complete the Application for Professional Field Semester (to be submitted in the first two weeks of the semester preceding student teaching)
2. Demonstrate success in EDUC 314 and EDUC 315 (childhood majors) or EDUC 338 and 33x (adolescence majors).
3. Present a cumulative grade point average of 2.7 or above
4. Complete all training sessions required for certification (Identification and Reporting of Suspected Child Abuse or Maltreatment; School Violence Prevention and Intervention; Prevention of Child Abduction; Prevention of Alcohol, Tobacco and Other Drug Abuse; Safety Education; Instruction in Fire and Arson Prevention)

To be approved for **overseas student teaching (an option for adolescence majors)**, the student will complete the first two requirements for student teaching approval noted above, as well as the following:

1. Present a cumulative grade point average of 2.8
2. Submit an essay explaining why he/she is qualified for the experience and how he/she would benefit from the experience
3. Provide a recommendation letter from the academic advisor.

Student Teaching Policy: Recognizing the importance of academic responsibility during teacher training and the challenges inherent in the teaching profession, the Teacher Education Committee has established a 2.7 cumulative grade point average as the necessary requirement for approval to student teach. However, there are rare occasions when students are slightly below the 2.7 cumulative grade point average, yet show reasonable potential for success in student teaching. When such students are identified by their education department advisor and/or the Student Teacher Coordinator, the student may prepare a Letter of Appeal and the case will be considered by the Teacher Education Committee.

Any student dismissed from the college for disciplinary reasons during the junior year or student teaching semester and subsequently readmitted must reapply to the Teacher Education Committee for acceptance for student teaching.

During the student teaching semester, students are not allowed to receive remuneration from the school for teaching services.

New York Teacher Certification

Initial Certification in New York State may be obtained by completing one of the following programs, and by completing three of the four sections of the New York State Teacher Certification Exam (NYSICE). These sections include the LAST, ATS-W, and CST.

Childhood Education - grades 1-6

Includes the education major and a 30-hour concentration in one of eight areas: English Language Arts; French Language, Culture & Linguistics; Intercultural Studies; Mathematics; Mathematics & Sci-

ence; Science; Social Studies; Spanish Language, Culture & Linguistics. (**Note:** Childhood education majors are required to take no more than two semesters of a modern foreign language.)

Requirement for 100 hours of pre-student teaching field experience will be met through the following courses:

EDUC 114.....	6 contact hrs.
EDUC 201.....	15 contact hrs.
EDUC 221	6 contact hrs.
EDUC 235.....	4 contact hrs.
EDUC 240	60 contact hrs.
EDUC 314.....	10 contact hrs.

Adolescence Education – grades 7-12

Includes the Education major and a second major in one of eight areas: Augmented History (Social Studies), Biology, Chemistry, English, French, Mathematics, Spanish, or Physics.

Requirement for 100 hours of pre-student teaching field experience will be met through the following courses:

EDUC 201	15 contact hrs.
EDUC 240	60 contact hrs.
EDUC 313	13 contact hrs.
EDUC 338	20 contact hrs.

Music Education – birth – grade 12

See the description for this program in the Music section of this catalog.

Physical Education – birth – grade 12

See the description for this program in the Physical Education section of this catalog.

Students who desire to teach in states other than New York should familiarize themselves with the requirements of the state in question and select those courses that meet such requirements. Thirty-eight states plus the District of Columbia and Overseas Dependent Schools now have reciprocity agreements with New York state in matters of certification. Lists of these states may be obtained from the education office.

Childhood Certification - Program Leading to Grades 1-6 Certification

Students must complete the following program plus one of the concentrations outlined below:

Prerequisites/Co-requisites

PSY 111 Introduction to Psychology.....	3
PSY 214 Child Psychology.....	3
American Studies: choose one	3
HIST 220 American History Survey	
POLS 222 American Political System	

Childhood Education Major

EDUC 114 Math for Elementary Teachers.....	3
EDUC 201 Instructional Psychology & Research.....	3
EDUC 217 Philosophy & History of Education.....	3
EDUC 221 Children’s Literature	3
EDUC 226 Multimedia Technologies	2
EDUC 235 Educating Exceptional Learners.....	3
EDUC 240 Teaching in Urban America.....	3
EDUC 314 Elementary Practicum I.....	1
EDUC 315 Elementary Practicum II.....	1
EDUC 316 Collaboration of School, Home, & Community I.....	1
EDUC 317 Collaboration of School, Home, & Community II.....	1
EDUC 320 Curriculum & Assessment in Elementary Classrooms.....	3
EDUC 328 Foundations of Language & Literacy	3
EDUC 329 Language & literacy for Diverse Learners	3
EDUC 341 Teaching Elementary Social Studies through the Language Arts.....	2
EDUC 342 Teaching Elementary Math & Science	3
EDUC 408 Childhood Student Teaching	10
EDUC 485 Seminar on Reflective Teaching.....	2

Concentrations

1. English Language Arts (30 hours)

Literature: 15 hours

ENGL 201 Literature of the Western World	3
ENGL 221 Children's Literature	3
ENGL electives-Any 3 courses in ENGL numbered 203 or above.....	9
<i>Writing/Communication: 15 hours</i>	
ENGL 101 Principles of Writing	3
COMM 210 Public Speaking	3
Three of the following, including 1 WRIT and 1 COMM	9
COMM 219 Oral Interpretation	3
COMM 245 Theater Arts	3
COMM 244 Readers Theater.....	3
COMM 315 Interpersonal Comm.....	3
WRIT 211, 212, or 213 Advanced Composition	3
WRIT 306 Creative Non-Fiction	3
2. French Language, Culture & Linguistics (30 hours)	
<i>Language: 18 hours</i>	
FREN 101/102 Beginning French.....	8
FREN 201 Intermediate French.....	4
Two of the following choices:.....	6
FREN 301 French Con & Reading I.....	3
FREN 302 French Con & Reading II,	3
FREN 305 French Phonetics	3
<i>Culture & Literature: 6 hours</i>	
Two of the following:	6
One French Civ & Culture course (300 or above)	3
One French Lit course (300 or above).....	3
One Mayterm in a French speaking culture	3
<i>Linguistics: 6 hours</i>	
Two of the following:	6
LING 220 Intro Linguistics	3
LING 312 Sociolinguistics	3
LING 351 TESOL	3
COMM 325 Cross-cultural Communication.....	3
3. Intercultural Studies (31 hours)	
<i>Cultural Studies: 16 hours</i>	
HIST 101,102 Western Culture	4
INCL 201 Intro Intercultural Studies	3
SOC 243 Cultural Anthropology	3
One of the following:.....	3
SOC 330 Culture & Family	
SOC 361 Race & Ethnicity	
One of the following:.....	3
LING 220 Intro Linguistics.....	3
LING 312 Sociolinguistics	3
LING 350 First and Second Language Acquisition	3
LING 352 Linguistics for TESOL.....	3
MISS 222 Modern Missions.....	3
URMN 212 Urban Ministry.....	3
MISS 395 ST: Missions in Africa	3
MIN/MISS/URMN/SOC 325 Life in the City.....	3
<i>Global & Community Awareness: 15 hours</i>	
COMM 325 Cross-cultural Communication.....	3
Two of the following, no more than one from each department (6)	
POLS 220 World Regional Geography	3
HIST 223 Latin American History to 1800	3
HIST 224 Latin American History since 1800	3
HIST 249 African History	3
HIST 251 History of East Africa.....	3
HIST 306 Australian History.....	3
MHS 254 Music of World Cultures	3
MISS 321 World Religions	3
ENGL 308 Australian Literature.....	3
ENGL 361 Contemporary World Literature	3
SOC 293 Eastern African Culture	3
ENGL 390 ST: African Folkore	3
<u>Exactly</u> 6 hours (4 + 2, or 3 + 3) from the following:.....	6
INCL 211 Intercultural Trans & Adjust.....	2
INCL 311 Intercultural Experience.....	4
INCL/MISS 231 Global Relief & Development	3
INCL/POLS 320 Community Org & Dev.....	3

INCL/POLS 336 Gov & Pol in Dev Countries	3
URMN 250 Evang & Social Action in Urban Context	3
SOC 295 Special Topics: Urban Policy	3
INCL 295 Special Topics	3
MISS 295/395 Special Topics	3

4. Mathematics (30 hours)

Mathematics: 17 hours

MATH 181,182 Calculus I & II.....	8
EDUC 114 Math for Elementary Teachers.....	3
MATH 2xx (any two courses at 200 level).....	6

Mathematics & Computer Science: 13 hours

Choose from among the following courses:.....	13
CSCI 211 Programming I.....	3
CSCI 218 Programming II.....	3
MATH 107 Pre-Calculus OR 110 Analytic Pre-Calculus.....	3
MATH 190 Math Apps & Issues.....	2
MATH 231 Probability.....	3
MATH 232 Math Stats.....	3
MATH 241 Differential Equations.....	3
MATH 261 Linear Algebra.....	4
MATH 321 Multivariate Calc.....	3
MATH 422 Advanced Calc.....	3
MATH 452 Point Set Topology.....	3
MATH 462 Algebra I.....	3
MATH 471 Complex Analysis.....	3

5. Mathematics & Science (30 hours)

Mathematics: at least 12 hours

MATH 107 Pre-Calculus	3
OR	
MATH 181 Calculus I.....	4
EDUC 114 Math for Elementary Teachers.....	3
At least 6 hours from among the following:.....	6+
MATH 181 Calc I (if not taken above).....	4
MATH 182 Calc II.....	4
MATH 190 Math Apps & Issues.....	2
CSCI 211 Programming I.....	3
CSCI 218 Programming II.....	3

Science: at least 14 hours

Choose two or more from among the following areas: BIOL, CHEM, and PHYS/ESCI

BIOL 103 Fund. of Biology	4
BIOL 105 Conservation Biology	4
BIOL 214 Wildlife Biology	3
BIOL 215 Local Flora	3
BIOL 217/218 Human Anatomy & Physiology	4
CHEM 121 Impact of Science on Society.....	3
CHEM 207 Intro Nutrition	3
CHEM 208 Intro Nutrition Lab.....	1
ESCI 101 Physical Geology.....	4
ESCI 102 General Astronomy	4
ESCI 212/213 Env. Earth Science.....	3

Note: While these science courses are recommended, students may take any science courses for which they have met prerequisites.

6. Science (30 hours)

At least two courses from each of the following areas: BIOL, CHEM, and PHYS/ESCI

BIOL 103 Fund. of Biology	4
BIOL 105 Conservation Biology	4
BIOL 214 Wildlife Biology	3
BIOL 215 Local Flora & Vegetation	3
BIOL 217/218 Human Anatomy & Physiology	4,4
CHEM 121 Impact of Science on Society.....	3
CHEM 207 Introduction to Nutrition.....	3
CHEM 208 Intro Nutrition Lab.....	1
ESCI 101 Physical Geology.....	4
ESCI 102 General Astronomy	4
ESCI 212 Environmental Earth Science	3
ESCI 214 Environmental Earth Science Lab.....	1

7. Social Studies (31 hours)

History: 19 hours

HIST 101/102 Western Civilization I & II	4
HIST 220 American History Survey.....	3
HIST 226 New York State History	3
HIST Two electives, numbered above 220	6
HIST One elective, non-European, non-American	3
<i>Political Science: 6 hours</i>	
POLS 220 World Regional Geography	3
POLS 222 American Political System.....	3
<i>Social Science: 6 hours</i>	
PSY 111 Introduction to Psychology.....	3
And one of the following	3
ECON 210 Microeconomics	3
SOC 101 Principles of Sociology.....	3
SOC 243 Cultural Anthropology	3

8. Spanish Language, Culture & Linguistics (30 hours)

Language: 18 hours

SPAN 101/102 Beginning Spanish.....	8
SPAN 201 Intermediate Spanish.....	4
Two of the following choices:.....	6
SPAN 301 Spanish Con & Reading I.....	3
SPAN 302 Spanish Con & Reading II.....	3
SPAN 305 Spanish Phonetics	3

Culture & Literature: 6 hours

Two of the following:	6
One Spanish Civ & Culture course (300 or above)	3
One Spanish Lit course (400 level)	3
One Mayterm in a Spanish speaking culture	3

Linguistics: 6 hours

Two of the following:.....	6
LING 220 Intro Linguistics.....	3
LING 312 Sociolinguistics	3
LING 351 TESOL	3
COMM 325 Cross-cultural Communication.....	3

Adolescence Education - Program Leading to Grades 7-12 Certification

Students majoring in adolescence education are required to complete the program outlined below in addition to one of the following content majors: Augmented History, Biology, Chemistry, English, French, Mathematics, Physics, and Spanish. See the descriptions of these majors in the appropriate section of the catalog.

Note: those choosing majors in Mathematics, French (literature track) and Spanish (literature track) must complete 30 hours in those areas - which means an additional elective in the major - to be compliant with New York state certification guidelines.

Pre/co-requisites

PSY 111 Introduction to Psychology.....	3
PSY 215 Adolescent Psychology	3

Adolescence Education Major

EDUC 201 Instructional Psychology & Research	3
EDUC 218 Philosophy & History of Secondary Education	3
EDUC 223 Adolescent Literature	3
or EDUC 351 TESOL	3
EDUC 226 Multimedia Technologies	1 or 2
EDUC 235 Educating Exceptional Learners.....	3
EDUC 240 Teaching in Urban America.....	3
EDUC 313 Language & Literacy in the Content Areas.....	3
EDUC 33x Secondary Teaching: Content Methods.....	3
332 English Methods	
333 Foreign Language Methods	
334 Math Methods	
335 Science Methods	
336 Social Studies Methods	
EDUC 338 Curriculum & Assessment in Secondary Classrooms.....	3
EDUC 409 Secondary Student Teaching I	6
EDUC 410 Secondary Student Teaching II	5
EDUC 411 Seminar in Secondary Teaching.....	3

Education minor: (15 hours)

An education minor may be chosen by students who wish to broaden their understanding of the educational process yet are not seeking certification.

Required Courses:

EDUC 201 Inst. Psych. & Research	3
EDUC 217 History & Philosophy	3
OR	
EDUC 218 History & Philosophy of Secondary Education	3

Choose three of the following in consultation with an Education Department faculty member:

EDUC 114 Math for Elementary Teachers.....	3
EDUC 221 Children’s Literature	3
EDUC 223 Adolescent Literature.....	3
EDUC 240 Teaching in Urban America	3
EDUC 235 Educating Exceptional Learners.....	3
EDUC 313 Lang. & Lit. in the Content Area.....	3
EDUC 351 TESOL.....	3
EDUC 355 Theory & Practice of Bilingual Education.....	3

Course Descriptions

EDUC 102 College Study Methods (P/U) (1, F&S)
Improve study habits: reading textbooks, taking notes, improving memory, preparing for and taking exams, writing research papers, time management. For any student who wishes to work to full potential.

EDUC 114 Math for the Elementary School Teacher (3, F&S)
Builds a conceptual framework for understanding number, numeracy, number operations, probability, statistics, geometry, and measurement. Focus on problem-solving and the use of manipulative materials for developing conceptual understanding.

EDUC 201 Instructional Psychology and Research (3, F&S)
The individual in the teaching/learning process. Focus on learning models and theories, cognition, individual differences, motivation, instructional psychology and classroom research models. Prerequisite: PSY 111

EDUC 217 History and Philosophy of Education (3, FS,M)
A survey of the philosophical and historical antecedents of American education and their relationships to current educational debates. Students develop an initial statement of their personal philosophy of education.

EDUC 218 History and Philosophy of Secondary Education (3, F)
A survey of the philosophical and historical antecedents of American education and their relationships to current educational debates with a focus on secondary schools. Students develop an initial statement of their personal philosophy of education.

EDUC 221 Children’s Literature (3, F&S)
Offers a survey of various genre in literature for preschool and elementary grade children with an emphasis upon developing criteria for selection and evaluation utilizing reader response theory, literary criticism, child development and philosophical perspectives.

EDUC 223 Adolescent Literature (3, F)
Students will read and analyze a variety of literature of interest to adolescents with an eye toward understanding adolescents and their place in society, developing criteria for evaluating adolescent literature, and exploring current trends in this literature. In this process students will investigate critical theories about the function and purpose of literature for adolescents, including developmental, aesthetic, and cultural considerations.

EDUC 226 Multimedia Technologies (1 or 2, F&S)
Introduction to (1) design and production of multimedia presentations for classroom use and (2) a variety of distance learning models that bring the World Wide Web into the classroom. One outcome product is a multimedia electronic portfolio. Childhood Ed majors must take the course for two credits; those with an adolescence education major may opt for either one or two credits.

EDUC 235 Educating Exceptional Learners (3, F & S)
Examines the historical and legal context for providing services for children with exceptionalities. Explores the scope of exceptionalities and the processes used to identify and address special needs. Focus on the CSE and referral process and the development and implementation of IEP’s in the classroom.

EDUC 240 Teaching in Urban America (3, M)
Provides exposure to and an understanding of race, class, and culture issues in contemporary urban

schools. The student will develop an awareness of family and community as partners with schools in the education enterprise. Students will participate in a ten-day field experience in an urban school, working as teachers' assistants. Recommended sophomore year.

EDUC 313 Language and Literacy in the Content Area (3, F)
Analysis of theory and practice of effective use of reading, writing and thinking across the curriculum, as applied to specific secondary school content areas.

EDUC 314 Elementary Practicum I (1, F)
Two half-days per week in either a primary (grades 1-3) or intermediate (grades 4-6) classroom. Focus on observing children and the learning environment, assisting the classroom teacher with daily routines, and supporting the learning of individual children. **Taken concurrently with EDUC 320 and EDUC 328. Prerequisites: EDUC 201 and EDUC 217**

EDUC 315 Elementary Practicum II (1, S)
Continuation of EDUC 314. Two half-days per week in same classroom assigned for EDUC 314. Focus on increasing responsibility for planning and teaching of lessons under the guidance of the classroom teacher. **Taken concurrently with EDUC 329, EDUC 341, and EDUC 342. Prerequisites: EDUC 314, EDUC 320 and EDUC 328**

EDUC 316 Collaboration of School, Home, and Community I (1, OD)
Considers the nature of relationships among students, families, educators, and community members and explores means of enhancing these relationships to improve the quality of teaching and learning for all children.

EDUC 317 Collaboration of School, Home, and Community II (1, OD)
A continuation of EDUC 316. Considers the nature of relationships among students, families, educators, and community members and explores means of enhancing these relationships to improve the quality of teaching and learning for all children.

EDUC 320 Curriculum and Assessment in Elementary Classroom (3, F)
Provides an exploration of the development of elementary curriculum and assessment and the creation of learning environments that support diverse learners. Includes an examination of lesson planning and unit planning. **Taken concurrently with EDUC 314 and EDUC 328.**

EDUC 328 Foundations of Language and Literacy (3, F)
Examines diverse perspectives on language and literacy learning in families, schools, and communities. Explores instructional planning and means of developing literacy learning. Students articulate a philosophy of teaching the English language arts and begin to develop a teaching portfolio. **Prerequisites: EDUC 201, EDUC 217, and EDUC 221, or permission of instructor. Taken concurrently with EDUC 314 and EDUC 320.**

EDUC 329 Language and Literacy for Diverse Learners (3, S)
Explores issues related to the teaching and learning of the English language arts including working with English language learners, developing authentic assessment, and meeting the needs of special learners. Students focus on educational research and the continued development of their portfolio. **Prerequisite: EDUC 328. Taken concurrently with EDUC 315.**

EDUC 338 Curriculum & Assessment in Secondary Classrooms (3, F)
Examination and analysis of the strategies and dynamics of teaching and learning in adolescent classrooms. Students will spend 20 class hours in a secondary school practicum experience. **Prerequisite: EDUC 201 and EDUC 218**

EDUC 33X Secondary Teaching: Content Methods (3, S)
Adolescence Education majors register for the appropriate content area methods course. This course should be taken the year prior to student teaching. Each course will address instructional methods, New York State Learning Standards, and curricular issues particular to the given content. **Prerequisite: EDUC 338**

- EDUC 332 English Methods
- EDUC 333 Foreign Language Methods
- EDUC 334 Math Methods
- EDUC 335 Science Methods
- EDUC 336 Social Studies Methods

EDUC 341 Teaching Elementary Social Studies and Language Arts (2, S)
Exploration of methods and materials for addressing the needs of diverse students in pursuing various aspects of national and state curriculum standards in social studies and language arts. Emphases will be upon thinking, speaking, listening, reading, and writing about world, U.S., and New York history and geography, as well as citizenship and multicultural education. **Prerequisites: EDUC 201, EDUC 217, and EDUC 221, or permission of instructor**

EDUC 342 Teaching Elementary Mathematics and Science (3, S)

Exploration of methods and materials pertaining to teaching elementary mathematics and science. National curriculum standards are examined as well as New York State Learning Standards in each subject. This course must be taken concurrently with Elementary Practicum, EDUC 314 or EDUC 315. **Prerequisites: EDUC 201 and EDUC 217**

EDUC 351 TESOL (Teaching English to Speakers of Other Languages) (3, F)

Review of second language teaching methodologies and learning theories. Examination of some of the unique challenges of English structure (phonological, morphological and syntactical) and the transfer problems that non-native speakers may have. Recommended prerequisite: LING 220

EDUC 355 Theory and Practice of Bilingual Education (3, S)

Designed as an introduction to bilingual education and bilingualism. Study of the sociolinguistic and psycholinguistic issues that surround bilingualism and bilingual education. An attempt is made to balance the psychological and the sociological, the macro education issues and the micro classroom issues, the linguistic and the sociopolitical, and to balance discussion at the individual and societal levels. Recommended prerequisite: LING 220

***EDUC 408 Childhood Student Teaching** (10, F&S)

Twelve weeks in a supervised student teaching experience in one classroom, either primary (grades 1-3) or intermediate (grades 4-6) depending on the elementary practicum placement. **Designed for students who have completed all education course work except that offered as a part of the student teaching semester. (See policy below on "Employment and Activities while Student Teaching.")**

***EDUC 409 Secondary Student Teaching I** (6, F&S)

Minimum seven-week placement in either grades 7-9 or grades 10-12 in the appropriate content area. The experience will include a minimum of two weeks with full teaching load responsibilities. **Prerequisite: EDUC 33x (Secondary Teaching Methods), EDUC 338, and EDUC 313. Taken concurrently with EDUC 410 & EDUC 411. (See policy below on "Employment and Activities while Student Teaching.")**

***EDUC 410 Secondary Student Teaching II** (6, F&S)

Minimum six-week placement in either grades 7-9 or grades 10-12 in the appropriate content area. The experience will include a minimum of two weeks with full teaching load responsibilities. **Prerequisite: EDUC 33x (Secondary Teaching Methods), EDUC 338, and EDUC 313. Taken concurrently with EDUC 409 & EDUC 411. (See policy below on "Employment and Activities while Student Teaching.")**

***EDUC 411 Seminar in Secondary Teaching** (3, F&S)

Serves as a capstone course to the major, exploring issues related to the teaching professions through reflective thinking and research-based learning. Other issues examined include identification and prevention of child abuse and abduction, safety education, substance abuse prevention, and similar current educational concerns. **Taken concurrently with EDUC 410 & EDUC 411.**

***EDUC 485 Seminar on Reflective Teaching** (2, F&S)

Provides an opportunity for childhood student teachers to research their practice and reconsider their philosophy of education in light of their student teaching experiences and educational research. Students also complete the development of their portfolio. **Taken concurrently with EDUC 408.**

***EDUC 230, 330, 430 Special Topics** (1, 2, or 3 OD)

Depending on interest, demand and faculty availability, courses will be offered to allow students to consider issues and aspects of educational theory and practice which are not fully explored elsewhere in the curriculum.

***EDUC 191, -2; 291, -2; 391, -2; 491, -2 Independent Study** (1, 2, or 3)

***EDUC 496 Honors in Education** (3, OD)

***IMPORTANT INFORMATION FOR STUDENT TEACHING**

Employment and Activities while Student Teaching:

It is the responsibility of the college to provide each student with the greatest opportunity for success during student teaching. Students entering this stage of their program are often unaware of the many facets of the experience and do not fully comprehend the time and effort needed to ensure success. Therefore, students are **expected** to eliminate all employment during the student teaching semester. This guideline was established to protect education students from overextending themselves as well as to protect the reputation of Houghton College's education program. However, because students may have extenuating circumstances that necessitate exemption from this restriction, the Teacher Education Committee agrees that under the following guidelines, a student may be permitted to work:

- The student has shown a history of responsible behavior with respect to course requirements and Department of Education guidelines.

- The student presents a written request stating his/her financial need and the anticipated work responsibilities, including days and hours.
- A supporting letter from his/her advisor indicating ability to meet student teaching responsibilities and work involvements with a high degree of success.
- The student can demonstrate that outside employment will not interfere with normal after-school responsibilities associated with the student teaching assignment.
- The student indicates willingness to abide by any restrictions concerning working that the Teacher Education Committee requires.

PLEASE NOTE: If outside employment hinders a student's teaching performance, the Teacher Education Committee reserves the right to require the student teacher to further limit or eliminate work hours.

Failure to follow the appeal procedure may result in the student being removed from the field experience.

Students may be members of intercollegiate teams and club sports **only** if they have received special approval from the Teacher Education Committee **prior to placement**. During the student teaching semester students may not enroll in other college classes with the exception of EDUC 411 or 485.

EDUCATIONAL MINISTRIES

(major, minor, and youth ministries concentration)

Department of Religion and Philosophy: Harold Kingdon, chair

Faculty: Richard Eckley, Harold Kingdon, Kristina LaCelle-Peterson, Terence Paige, Carl Schultz, Paul Shea, John Tyson, J. Michael Walters

Major (BS): (33 hours plus a minor in Bible)

The **educational ministries** major, along with its **youth ministries concentration**, includes a strong liberal arts foundation plus theoretical and applied studies in religious education, to assist the student in preparing for church or para-church vocations such as Christian education director, children, youth, or adult education director, or careers in denomination educational programs or publications. The department expects that majors will fully prepare themselves for the above vocations through subsequent graduate programs in a university or seminary. To be eligible for TAP, New York state residents must also declare a second major and work toward a BA degree.

12 hours in educational ministries:

EDMN 231 Foundations of Educational Ministry.....	3
EDMN 325 Bible Study and Teaching Methods	3
EDMN 330 Christian Development of Children, Youth, and Adults	3
EDMN 442 Internship in Educational Ministries	3

6 hours in ministry:

MIN 210 Introduction to Christian Ministries	3
MIN 317 Leadership in the Church.....	3

6 hours in theology

THEL 313 Systematic Theology	3
THEL 320 Spiritual Formation	3

3 hours in psychology or education chosen from:

PSY 214 Child Psychology	3
PSY 218 Social Psychology.....	3
PSY 306 Psychology of Religion.....	3
EDUC 201 Instructional Psychology and Research	3

3 hours in family studies chosen from:

PSY 230 Lifespan Development of the Family.....	3
PSY 326 Introduction to Family Systems.....	3
SOC 237 Introduction to Marriage & Family Studies.....	3

3 hours in urban ministry chosen from:

URMN 212 Urban Ministry	3
URMN 250 Evangelism & Social Action in the Urban Context	3

The Standard Teacher Diploma issued by the Evangelical Training Association (ETA), of which Houghton College is a member, is awarded to all who complete a major in educational ministries.

Youth Ministries Concentration (42 hours; plus a minor in Bible)

The youth ministry concentration requires the full core of Educational Ministries courses listed above, plus nine hours as follows:

EDMN 350 Youth Evangelism and Discipleship.....	3
PSY 215 Adolescent Psychology	3

And three hours chosen from the following:	
Outdoor Leadership Training.....	REC 227
Administration of Organized Camps.....	REC 240
Program Planning and Evaluation.....	REC 300
Methods and Materials for Camps & Outdoor Education.....	REC 301

Minor: (15 hrs arranged on a *contract* basis with the Educational Ministries program advisor)

The following courses are required:	
MIN 210 Introduction to Christian Ministries.....	3
EDMN 325 Bible Study and Teaching Methods.....	3
THEL 313 Systematic Theology.....	3

In addition, six hours of electives are included as an *emphasis* in the following areas:

1. Educational Ministries core (except EDMN 442)
2. Youth
3. Missions
4. Urban Ministry

Course Descriptions

EDMN 231 **Foundations of Educational Ministry** (3, S)
Historical, philosophical, and theological developments of religious and Christian education in relation to the practice of ministry.

EDMN 325 **Bible Study and Teaching Methods** (3, F)
Survey of methods of Bible study and approaches to teaching/learning. Emphasizes: lesson design, planning and presentation, small group leadership, curricula.

EDMN 330 **Christian Development of Children, Youth and Adults** (3, F)
Examines principles and methods used to foster the spiritual development of children, youth, and adults in their respective life situation.

EDMN 350 **Youth Evangelism and Discipleship** (3, S)
Eclectic, descriptive, and critical examination of theory and practice of contemporary youth evangelism and discipleship in selected church and para-church models, including denominational programs, Campus Life, and Young Life.

EDMN 442 **Internship in Educational Ministries** (3, F/S)
Supervised field experience in a church or para-church agency combining academic work with practical and professional responsibilities and relationships. Prerequisites: MIN 210, EDMN 325, and 330 or permission of the educational ministries advisor.

EDMN 191, -2; 291, -2; 391, -2; 491, -2 **Independent Study** (1, 2 or 3)

EDMN 496 **Honors in Educational Ministries** (3, S)

ENGINEERING

Department of Physics and Earth Science: Mark Yuly (chair)

Faculty: Ronald Rohe, Mark Yuly

Adjunct: John Andrews

Applied Physics Major – Engineering Emphasis (BS)

(31 hours in major, 17 in prerequisites; 13 in co-requisites)

General Information

This major is for those students interested in the engineering applications of physics, and is preparation for an engineering-related career or graduate school in engineering or physics.

The requirements for the engineering physics major are as follows:
Prerequisites (17):

PHYS 151,152 General Physics I, II.....	8
MATH 181,182 Calculus I,II.....	8
PHYS 170 Introduction to Engineering.....	1
Required (31):	
PHYS 275, 276 Experimental Physics Lab	2
PHYS 215 Engineering Mechanics: Statics	3
PHYS 250 Engineering Mechanics: Dynamics.....	3
PHYS 258 Analog Electronics	4
PHYS 259 Digital Electronics.....	4
PHYS 212 Modern Physics	3
PHYS 353 Electricity and Magnetism I.....	3
PHYS 355 Thermal Physics.....	3
PHYS 471, 472 Physics Project Lab.....	2
PHYS 482 Physics Seminar	1
One advanced theory course selected from:	
PHYS 352 Mechanics II.....	3
PHYS 354 Electricity and Magnetism II.....	3
PHYS 356 Quantum Mechanics	3
Co-requisites (13):	
MATH 241 Differential Equations	3
MATH 321 Multivariate Calculus.....	3
CHEM 151 General Chemistry I	4
CSCI 211 Programming I.....	3
Additional recommended supporting courses include:	
PHYS 260 Optics.....	3
CHEM 152 General Chemistry II	4
CSCI 211 Programming I.....	3
ECON 210 Microeconomics.....	3
BADM 303 Entrepreneurship.....	3

Dual-Degree Engineering Program

General Information

This is a cooperative program involving Houghton and a partner engineering school. Houghton College currently maintains formal dual-degree program arrangements with Washington University in St. Louis, MO, and Clarkson University in Potsdam, NY. Both of these universities offer outstanding engineering programs.

In a typical dual-degree program, the student will spend three years at Houghton and two years at the partner school of choice. At the conclusion of five years of study, a student making normal progress will have completed all requirements to receive degrees both from Houghton College and from the partner university. The Houghton College degree would be in an appropriate field of study, typically physics, general science, chemistry, or biology, and the degree from the partner school would be in the student's chosen engineering field.

A typical course load during that time would include

MATH 181, 182 Calculus I, II	8
PHYS 170 Introduction to Engineering.....	1
PHYS 151, 152 General Physics I, II	8
CHEM 151, 152 Chemistry I, II	8
CSCI 211 Programming I.....	3
MATH 241 Differential Equations	3
MATH 321 Multivariate Calculus.....	3

Other courses may include

PHYS 175 Engineering Mechanics: Statics	3
PHYS 250 Engineering Mechanics: Dynamics.....	3
PHYS 258 Analog Electronics.....	4
PHYS 259 Digital Electronics I	4
PHYS 352 Mechanics II.....	3
BIOL 151, 152 General Biology I, II.....	8
CHEM 241,242 Organic Chemistry	8
CSCI 236 Data Structures and Algorithms	3

The remainder of a student's load at Houghton would consist of major requirements and integrative studies courses. The integrative studies requirements at Houghton would, of course, meet humanities and/or social science requirements at the partner school.

ENGLISH (major and minor)

Department of English and Communication: Douglas Gaerte, chair

Faculty: Bruce N. Brenneman, Charles E. Bressler, Laurie A. Dashnau, John R. Leax, James F. Wardwell, Linda M. Woolsey, Stephen A. Woolsey, James A. Zoller

Major: (36 hours in the major)

The major in English provides students with strong liberal arts preparation for a variety of careers including education, business, and the media. It is also appropriate for pre-seminary and pre-law students.

Required courses:21

Advanced Composition: Writing about Literature (WRIT 213)	3
English Literature I, II (ENGL 203, 204).....	3,3
American Literature I, II (ENGL 215, 216)	3,3
Literary Criticism (ENGL 412)	3
Senior Seminar: Problems of Literary Study (ENGL 418)	3

An additional five courses of electives are to be selected as follows:..... 15

Choose two or three courses from:

English Renaissance (ENGL 311).....	3
Restoration and Eighteenth Century (ENGL 312).....	3
Romanticism and Nineteenth Century (ENGL 313).....	3
British Fiction (ENGL 321).....	3
Shakespeare (ENGL 350).....	3

Choose two or three courses from any ENGL course above 216 not listed above (except 353)

Children's Literature (ENGL 221).....	3
Adolescent Literature (ENGL 223).....	3
Modern Drama (ENGL 315)	3
Modern American Poetry (ENGL 319)	3
Modern British Poetry (ENGL 320)	3
American Fiction (ENGL 322).....	3
American Short Story (ENGL 334).....	3
Contemporary World Literature (ENGL 361).....	3
Introduction to Linguistics (LING 220)	3

Special Topics in Literature (ENGL 390) may be included in either category its subject matter suggests; the major advisor will provide approval.

Minor: (18 hours)

Students electing a minor in English are required to take either both semesters of English Literature (ENGL 203, 204) or both semesters of American Literature (ENGL 215, 216). An additional 12 hours of electives are to be selected from literature courses with an ENGL prefix. Advanced Composition: Writing about Literature (WRIT 213) is also strongly recommended and may be substituted for a literature course.

Course Descriptions

ENGL 101 Principles of Writing (3, F&S)

Development of writing skills. Focus on narrative, descriptive, and expository essays. Principles taught by frequent writing, peer workshops, discussions, conferences. Extra tutorial contact required of those with difficulties with mechanics.

ENGL 201 Literature of the Western World (3, F&S)

An introduction to the Western literary heritage from the classical to the post-modern era. Emphasis on how to read poetry, drama, and fiction for better comprehension and interpretation as well as for enjoyment.

ENGL 203 English Literature I (3, F)

Surveys major works and literary movements in England from Beowulf to Neoclassicism. Provides biographical, historical, and ideological information to enhance understanding. Integrative studies requirement for English majors.

ENGL 204 English Literature II (3, S)

Surveys major works and literary movements of the romantic, Victorian, modern and post-modern

periods in their biographical, historical, and ideological contexts. Integrative studies requirement for English majors.

ENGL 205 English Grammar (1, OD)

Intensive review of English grammar emphasizing practice in punctuation, parts of speech, syntax, usage, and sentence construction. Elective credit only.

ENGL 215 American Literature I (3, F)

Emphases on Puritan thought, deism, romanticism, transcendentalism. Close reading of primary texts. Required of English majors.

ENGL 216 American Literature II (3, S)

Emphasis on emerging realism, the development of naturalism, literary modernism, and new directions in the 20th century. Close reading of primary texts. Required of English majors.

ENGL 217A Writers in Nature (3, F)

(See course description in Off-Campus Programs -- Adirondack Park section.)

ENGL 220 Introduction to Linguistics (3, F&S)

An introduction to the basic elements of linguistics. Emphasis on phonology (the study of sounds), morphology (the study of word formation), syntax (phrase and sentence formation), and semantics (meaning in language).

ENGL 221 Children's Literature (3, F&S)

A survey of various genre in literature for children and young adults with an emphasis upon developing criteria for selection and evaluation. Also explores a range of techniques for enhancing children's understanding and enjoyment of literature.

ENGL 223 Adolescent Literature (3, F&S)

Students will read and analyze a variety of literature of interest to adolescents with an eye toward understanding adolescents and their place in society, developing criteria for evaluating adolescent literature, and exploring current trends in this literature. In this process students will investigate critical theories about the function and purpose of literature for adolescents, including developmental, aesthetic, and cultural considerations.

ENGL 308 Australian Literature (3, F)

(See course description in Off-Campus Programs -- Australia section.)

ENGL 311 The English Renaissance (3, S04)

Poetry and prose from Sidney to Milton (excluding Shakespeare). Attention given to political, historical, religious background. Emphases on Spenser, Milton, and the 17th century devotional poets.

ENGL 312 Restoration and Eighteenth Century (3, S05)

Major figures of English letters 1660-1800. Attention given to satire, comedy of manners, literary criticism, and the rise of the novel.

ENGL 313 Romanticism and Nineteenth Century (3, S04)

Problems and topics in nineteenth century life, culture, and letters. Readings in selected major figures from Wordsworth to Swinburne. Emphasis on the relationship of literary tastes and critical opinions to the intellectual and spiritual crisis of the age.

ENGL 315 Modern Drama (3, F03)

Emphasis on American and English drama from around 1900 to the present. Beckett and O'Neill as progenitors of significant theatrical trends such as realism, expressionism, and the absurd.

ENGL 319 Modern American Poetry (3, F03)

American poetry from 1900 to present. Emphases on trends and selected major figures such as Eliot, Frost, Pound, Stevens, Williams.

ENGL 320 Modern British Poetry (3, S05)

British poetry from 1900 to present. Emphases on trends and selected major figures such as Hopkins, Hardy, Yeats, Auden, Thomas.

ENGL 321 British Fiction (3, F03)

History and development of the English novel, with emphasis on such writers as E. Bronte, Eliot, Hardy, Wilde, Conrad, Forster, Joyce.

ENGL 322 American Fiction (3, F04)

History and development of the American novel, with emphases on such writers as Melville, James, Dreiser, Cather, Fitzgerald, Hemingway, Faulkner, and Baldwin.

ENGL 334 The American Short Story (3, S0D)

Development of the American short story from its beginnings with Irving, Poe, and Hawthorne to

modern practitioners such as Malamud, O'Connor, and Updike.

ENGL 350 **Shakespeare** (3, F)

Survey of significant examples of Shakespeare's histories, comedies, tragedies, and some poetry. Includes biographical, historical and critical background; emphasis on close reading of texts.

ENGL 353 **Internship for English Majors** (3, Summer)

Opportunities for off-campus experiences investigating a career option in fields other than teaching, such as advertising, government service, industrial publications, and library science.

ENGL 361 **Contemporary World Literature** (3, F04)

Selections from world masterpieces of the 20th century, especially novels since World War II from the non-English-speaking world.

ENGL 390 **Special Topics in Literature** (3, F&S & May)

Opportunity for study of issues, literary figures, or problems not covered elsewhere in the curriculum (e.g., the Oxford Christians, African-American literature, literature by women).

ENGL 412 **Literary Criticism** (3, F&S)

Theoretical and practical study of the principles of criticism. Emphasis on contemporary critical schools. Brief historical survey. Prerequisite: six hours of literature above ENGL 210.

ENGL 418 **Senior Seminar: Problems of Literary Study** (3, S)

Original research and study into selected literary topics. Integration of faith and learning. Intensive library work. Required of all majors. Prerequisite: 21 hours of literature plus Literary Criticism (ENGL 412)

ENGL 291, -2; 391, -2; 491, -2 **Independent Study** (1, 2, or 3)

ENGL 496 **Honors in English** (3, S)

ENVIRONMENTAL SCIENCE

ENVIRONMENTAL STUDIES (major and minor)

Department of Biology: James M. Wolfe, chair

Faculty: John Leax, David Odell, Robert Smalley, James Wolfe, others as determined by chair

Biology with Environmental Emphasis major (BA, BS)

For students wanting to major in environmental science, we recommend the Environmental Emphasis track within the Biology major (see BIOLOGY). The major builds upon a strong field curriculum (including options of off-campus courses and programs in Africa, Alaska, and the Adirondacks) and prepares students to take the New York state civil service exam for application as a conservation biologist with the NYS Department of Environmental Conservation as well as those planning on further graduate study.

Environmental Stewardship minor

The environmental stewardship minor provides background for students who plan careers that intersect with environmental issues. The minor is supradisciplinary with courses from biology as well as other areas (e.g. English, recreation). The minor can be completed via two options:

1) The Houghton in Adirondack Park program (see Off-Campus Programs) at Star Lake offers a fall semester of courses which complete the minor. This program builds upon the Adirondack Park model to examine issues of environmental stewardship in both local and global contexts.

2) The minor can be completed by the following on-campus courses:

Required courses:

BIOL 214 Wildlife Biology <u>or</u>	
BIOL 215 Local Flora and Vegetation*	3
REC 401 Natural Resource Management	3
ESCI 212 Environmental Earth Science*	3
WRIT 320 Writing About Nature and the Environment	3
BIOL 475 Environmental Stewardship Senior Seminar	1
Total:	13

* Biology majors with environmental emphasis (where such courses are duplicated or superseded) would substitute Atmospheric Science (ESCI 224), and Public Policy Analysis (POLS 242) or World Regional Geography (POLS 220).

Recommended courses: BIOL 105 Conservation Biology (4); an internship or independent study with environmental management is strongly recommended (1-2).

EQUESTRIAN STUDIES (minor)

Department of Physical Education/Exercise Studies & Recreation/Leisure:

William R. Swanson, chair

Faculty: Thomas Kettelkamp, Jo-Anne Young

Minor: (13-14 hours).

Students take two of these three courses:

REC 220 Leisure and Society	3
REC 221 Intro to Leisure Service Delivery Systems.....	3
REC 411 Seminar	2

Students also take HRSM 224 Riding Instructor Certification (2) plus six hours of equestrian studies electives (HRSM, 211 level or above). **Note: no more than eight hours of HRSM courses may be counted towards graduation.**

Course Descriptions

ALL equestrian courses have fees. HRSM 113 has a single fee; others have double fees.

HRSM 113 Horsemanship I (1, F&S)

Fundamental skills in hunt seat, dressage, and/or western riding, according to student background or interest. Grade based on improvement in skills. One riding lab per week; written final. (Counts for PHED 102 integrative studies credit.)

HRSM 223 Horsemanship II (Activity Lab) (2, S)

Principles of horse management and other areas related to equitation studies. Hunt-seat equitation, basic dressage, ring riding, and cross-country riding.

HRSM 224 CHA Riding Instructor Certification (2, M)

Camp Horsemanship Association (CHA) curriculum: CHA clinic and horsemanship teaching certification in CHA camp programs. Teaching and equitation skills in ring and trail riding of hunt and stock seat. Horsemanship teaching practicum. Prerequisite: REC 113, 223 or permission

HRSM 276 Dressage (2,S)

Philosophical and physiological building blocks of dressage, leading to mastery of Training Level and introduction to First Level dressage; lays the necessary foundation for effective horsemanship in all higher level disciplines.

HRSM 323 Eventing (2, F)

Fundamentals of dressage and introduction to eventing (three-phase horse trials; includes dressage, cross-country galloping and jumping, stadium jumping techniques). Prerequisite: REC 223 or permission

HRSM 324 Breaking and Training (1, F)

Foundations of breaking and training the young horse. Students work with the actual training of a young horse, utilizing classical principles, philosophy, methodology. Prerequisite: REC 223 or permission

HRSM 325 Horsemanship: Jumping I (2, F&S)

Fundamentals of basic jumping position and introduction to correctly navigating a course. Philosophy of the hunt seat system of riding. Prerequisite: HRSM 223 or permission.

HRSM 326 Horsemanship: Jumping II (2, S)

Building skills, refining techniques, and expanding technical knowledge learned in HRSM 325. Prerequisite: HRSM 223 or permission.

HRSM 327 Mini-Prix Jumping Equitation (2, F)

Riding hunt seat equitation and showing hunters or jumpers; learning principles, practices, and philosophy of course design for the various classes and competitions for jumpers.

HRSM 328 Horsemanship: Judging (3, F)

Lectures and field trips incorporating judging assignments for learners; understanding the duties of the judge; using good judging to educate riders.

HRSM 295, 395, 495 Special Topics (2 or 3, OD)

Courses may be taught relative to special topics in horsemanship, such as riding for the disabled, CHA trail guide certification, CHA instructor of riders with disabilities certification, western reining, etc.

FAMILY STUDIES (minor)

Department of Psychology and Sociology: Richard D. Stegen, chair

Coordinators: Michael Lastoria, Jayne Maugans

Minor: (15 hours)

The Family Studies minor is an interdisciplinary program, combining the fields of anthropology, sociology, psychology, and religion. Special topics in other disciplines are also offered according to interest and demand. The minor is designed to provide students with adequate knowledge and skills needed for professional careers in human services and leadership roles in the church, family, and community, in addition to preparing students for further education in Family Studies and related areas.

Prerequisites:

SOC 101 Principles of Sociology
PSY 111 Introduction to Psychology

Required courses:

SOC 237 Introduction to Marriage and Family Studies
PSY 326 Introduction to Family Systems

Nine hours selected from:

PSY 230 Lifespan Development of the Family
PSY 325 Human Sexuality
THEL 337 Theological Foundations of the Family
SOC 330 Culture and Family
SOC 362 Gender Relations
SOC 390 Practicum in Family Studies
SOC 394 Internship in Family Studies
SOC 297 Special Topics Courses (*preapproved by a coordinator of Family Studies*)
SOC 394 Internship in Family Studies

(NOTE: No minor may include more than six hours of field experience credit.)

Course Descriptions (see Sociology and other areas)

FOREIGN LANGUAGES (majors and minors)

Department of Foreign Languages and Linguistics: Andrew Gallman, chair

Faculty: Marcus Dean, Andrew Gallman, Richard Gould, Nan Hussey, Rebecca Loaiza, Jean-Louis Roederer, Carl Schultz, Angela Tudorii

General Information:

Normally, native speakers of French or Spanish are not admitted to the conversation courses for credit. Junior-year abroad programs are available in France, Canada, Spain, Colombia, Guatemala, Costa Rica, and Germany/Austria.

CDRP: Cross-disciplinary Research Project-A collaborative effort between the Foreign Language Department and select academic disciplines, allowing qualified students to enrich their studies in both areas through a joint research project. Gives **one** hour of credit in the foreign language, repeatable to a maximum of **three**. Credit may be applied to language majors, minors, or electives. Consult the Foreign Languages Department for specific guidelines and eligibility requirements. Applicable CDRP courses are identified by "CDRP" in departmental course listings. Collaborating departments are: Business and Economics, History and Political Science, Psychology and Sociology. Students taking a CDRP must fill out a special form that can be obtained from the Records Office.

French Major: (27-33 hours), **Spanish Major:** (27-33 hours)

French, German, & Spanish Minors: (9 hours beyond intermediate level)

Greek Minor: (9 hours beyond GREK 321)

Hebrew and Latin coursework

FRENCH and SPANISH

The French and Spanish majors are divided into three tracks. Students wishing to pursue a major in French or Spanish must first choose which track they wish to follow in order to determine the appropriate courses to take for their major.

(1) Literature (27 hours): Students take 27 hours of classes denoted as FREN or SPAN depending on their language. Students must take the following from the courses noted in the sections below: two

Conversation and Grammar courses; four Literature courses one 1 Civilization course and two Foreign Language electives. At least 21 hours of these courses must be taken *in the foreign language*, e.g., FREN 301 but *not* FREN 323 (in Engl.).

(2) Cross-cultural Communication: (33 hours): Students following the cross-cultural communications track must take a total of 12 hours of selected communications courses from the English and Communication department. No more than six of these hours may be taken at the 200 level and at least three of these hours must be taken at the 400 level. These courses should be selected from: COMM 245, 246, 251, 303, 310, 312, 316, 320, 325, 350, 351, 353, 415, 417, 496. For details on these courses, please refer to the English and Communication section of this catalog.

Students must also take the following from the courses noted in the sections below: six hours of Conversation and Grammar; six hours of Literature; and nine hours of Civilization and Culture (at least three hours of Civilization & Culture must be taken *in the foreign language*, e.g., SPAN 301 but *not* SPAN 323 (in Engl.))

NOTE: INDS 211 Intercultural Transition and Adjustment *is required* of all language majors/minors taking a semester abroad, and highly recommended for all other students studying abroad for Houghton credit.

Section Requirements: The courses below are divided into four sections. Pay close attention to the requirements for the track you wish to pursue.

1. Conversation and Grammar:

French (FREN)

- 301-Con & Reading
- 302-Con & Reading
- 452-Adv. Gram & Comp.
- 461-Advanced Con.

Spanish (SPAN)

- 301-Con & Reading
- 302-Con & Reading
- 452-Advanced Span Composition

2. Literature:

French (FREN)

- 321-Survey of Literature
- 407-Drama of 20th Century
- 408-Novel of 20th Century
- 409-Novel of 19th Century
- 395-Special Topics

Spanish (SPAN)

- 401-Survey of Span literature
- 402-Survey of Span literature
- 423-Masterp. of Span-Amer lit
- 424-Masterp. of Span-Amer lit

3. Civilization and Culture

French (FREN)

- 315-Mayterm
- 421-French Civ
- 395-Special Topics
- 323-Political Cinema (in Engl)
- 324- Crossing Cultures (in Engl)

Spanish (SPAN)

- 341-Mayterm in Spain
- 342-MesoAmerican Civ.
- 344-Latin American Mayterm
- 211-Ecotour in Honduras
- 323-Political Cinema (in Engl)
- 324-Crossing Cultures (in Engl)
- 405-Spanish American Civ
- 406-Civilization of Spain
- HIST 223 *or* HIST 224
- (by Span. faculty permission only)
- (up to three hours of CDRP)

(up to three hours of CDRP)

4. Courses which may be applied to one of several tracks:

French (FREN)

- 395-Special Topics*
- 481-French Honors Intrnshp

Spanish (SPAN)

- 481-Spanish Honors Internship

*Depending on the course of study, this course may be applied as three hours of Literature *or* Civilization & Culture credit. Consult the professor for further clarification on the nature of the course.

FRENCH

FREN 101, 102 **Beginning French** (4/4, F&S)

Development of the skills of comprehending, speaking, reading, and writing French. One hour of in-class lab and additional lab practice required.

FREN 201 **Intermediate French** (4, F&S)

Grammar review, selected literary readings and oral practice. Laboratory experience may be required. Prerequisite: FREN 102, or placement by examination

FREN 301, 302 **Conversation and Readings** (3/3, F&S)

Intensive practice in speaking French. Oral discussions and reports based on contemporary readings. Laboratory practice required. Prerequisite: FREN 201 or equivalent. Students who have completed FREN 305 and above must obtain permission of instructor.

- FREN 305 French Phonetics** (3, S04, S07)
Designed for the English-speaking student, this course stresses corrective measures for difficulties arising from Anglo-American pronunciation habits. Language lab practice required. Prerequisite: FREN 201 or equivalent
- FREN 204 or 315 Paris: Capital of French Culture** (3, May, 05)
A three-week field trip course in Paris. Daily lecture-visits and excursions to places of cultural interest both in Paris and its environs. Language instruction and a long and short paper required for integrative studies or major/minor credit. Approximately \$1950 above tuition.
- FREN 321 Survey of French Literature** (3, F03, 06)
Masterpieces of French literature from its beginnings to the present. Prerequisite: FREN 301 or equivalent
- FREN 395 Special Topics** (3, OD)
Opportunity for study of topics not covered elsewhere in the curriculum, such as: Quebec studies. Depending upon qualifications and student needs, others may be proposed by the French faculty. Prerequisite: FREN 301 or equivalent
- FREN 407 French Literature of the 20th Century: Drama** (3, 05, 08)
Masterpieces of the French drama since 1900. Prerequisite: FREN 301 or equivalent
- FREN 408 French Literature of the 20th Century: Novel** (3, F05, 08)
Masterpieces of the French novel since 1900. Prerequisite: FREN 301 or equivalent
- FREN 409 French Novel of the 19th Century** (3, S04, 07)
A study of selected masterpieces of the French romantic and realistic novel. Prerequisite: FREN 301 or equivalent
- FREN 421 French Civilization** (3, F04, 07)
Historical backgrounds and major contributions of France to contemporary culture. Prerequisite: FREN 301 or equivalent
- FREN 452 Advanced French Grammar and Composition** (3, S06, 09)
A study of advanced grammar and style. Practice in writing compositions. Prerequisite: FREN 301 or equivalent
- FREN 461 Advanced French Conversation: Current Events** (3, S05, 08)
Intensive oral practice with a focus on current issues in Francophone countries. Prerequisite: FREN 301 or permission of instructor
- FREN 481 French Honors Internship** (3/3, F&S)
Experience in a college classroom. The student will be expected to assist the college professor in the classroom at the intermediate level (or above) three days a week. Introduction to prevailing language methods of instruction. **Permission of instructor required.** Must be a French major to be eligible. Upperclassmen and students in Education will be given priority.
- FREN 391, -2; 491, -2 Independent Study** (1, 2, or 3)
- FREN 496 Honors in French** (3, S)

SPANISH

- SPAN 101, 102 Beginning Spanish** (4/4, F&S)
Audio-lingual approach to speaking, reading, and writing. One hour of in-class lab and additional laboratory practice required.
- SPAN 201 Intermediate Spanish** (4, F&S)
Grammar, conversation, and civilization. Reading ability stressed. One hour of in-class lab and additional practice required. Prerequisite: SPAN 102 or placement by examination
- SPAN 204 or 341 May in Spain** (3, OD)
Tour of approximately six renowned Spanish cities. Visit museums, historic structures, other cultural sites; see highlights of Spain's past in art and architecture. Cost: \$1500 (est.) above tuition.
- SPAN 205 or 342 MesoAmerican Civilization** (3, OD)
Tour of the Aztec and Mayan heartland in Mexico. Includes visits to the ancient Aztec capital of Tenochtitlan in Mexico City and the pyramids of Teotihuacan in the Valle de Mexico, and then to the Mayan ruins of Uxmal, Chitzen Itza and Tulum in the Yucatan peninsula. Includes extended tours of the anthropological museums in Mexico City and Merida. Cost: \$1000 (estimated) above tuition.
- SPAN 206 or 344 Latin-American Seminar: Current Issues** (3, OD)
Three-week study tour in Latin America. Lectures and discussions on historical background, social problems, role of the church, revolutionary ferment, relations with the United States. Excursions to points of interest. Emphasis on a Christian response to third-world realities. Cost approximately \$1500 above

tuition. (SPAN 207 fulfills SPAN 201; 346 fulfills conversational language requirement for Intercultural Studies majors.)

SPAN 207 or 346 Aspects of Costa Rica: Language, Culture, and People (4, M)

(SPAN 207 fulfills SPAN 201; 346 fulfills conversational language requirement for Intercultural Studies majors.)

Four-week immersion experience in Costa Rica. Students will be hosted in the homes of nationals as they undergo two weeks of intense language instruction at S4S Spanish school in the historic "City of Flowers," Heredia. Opportunities for service, relationships with university students, involvement in church activities, and excursions will present a broad picture of the current realities of life in Latin America. Prerequisite: SPAN 102 or equivalent. Cost approximately \$1,800 above tuition.

SPAN 211 Ecotour in Honduras (3, M)

Students will have a third-world experience including a service project with Christian Camping International. Visits to national parks and Mayan Indian ruins. Activities include hiking, snorkeling, and attending cross-cultural classes. Check with professor for cost above tuition. (Fulfills SPAN 201)

SPAN 301, 302 Spanish Conversation and Readings (3/3, F/S)

Development of skill in oral comprehension and expression through the discussion of contemporary life issues and of selected readings in Hispanic literature. Prerequisite: SPAN 201 or equivalent

SPAN 305 Spanish Phonetics (3, S05, 07)

A survey of pronunciation problems, designed to help the English-speaker develop an accurate pronunciation of Spanish. Introduction to the phonetic alphabet and to basic concepts of linguistic science. Extensive oral practice. Prerequisite: SPAN 201 or equivalent

SPAN 401, 402 Survey of Spanish Literature (3/3, F05/S06)

Representative works, El Cid to contemporary times. Prerequisite: SPAN 302 or permission

SPAN 405 Spanish-American Civilization (3, F04, 06)

Survey of Spanish-American culture, pre-Colombian to the present. Socioeconomic problems and relationships with the United States. Prerequisite: SPAN 302 or permission

SPAN 406 Civilization of Spain (3, F03, 05)

Geography and cultural history of Spain. Present political situation, education, art, music, everyday life. Prerequisite: SPAN 302 or permission

SPAN 423, 424 Masterpieces of Spanish-American Literature (3/3, F04/S05)

Selected readings from outstanding Spanish-American authors representing different countries, periods and genres. Prerequisite: SPAN 302 or permission

SPAN 452 Advanced Spanish Composition (3, S04, 06)

A comprehensive course in structure and usage. Prerequisite: SPAN 302 or permission

SPAN 481 Spanish Honors Internship (3/3, F&S)

Experience in a college classroom. The student will be expected to assist the college professor in the classroom at the intermediate level (or above) three days a week. Introduction to prevailing language methods of instruction. **Permission of instructor required.** Must be a Spanish major to be eligible. Upperclassmen and students in Education will be given priority.

SPAN 191, -2; 291, -2; 391, -2; 491, -2 Independent Study (1, 2, or 3)

SPAN 496 Honors in Spanish (3, S)

GERMAN

GERM 101, 102 Beginning German (4/4, F&S)

Audio-lingual approach to speaking, reading, and writing. One hour of in-class lab and additional lab practice required.

GERM 201 Intermediate German (4, F&S)

Review and expansion of grammatical patterns, composition, and conversation; modern fiction, biography, and cultural-historical material. Laboratory practice required. Prerequisite: GERM 102 or placement by exam.

GERM 295, 395, 495 Special Topics (3, OD)

GERM 301 German Conversation & Readings (3, S04, 06)

Intensive practice in speaking German. Oral discussions and reports based on contemporary readings. Laboratory practice required. Prerequisite: German 201 or equivalent

GERM 191, -2; 291, -2; 391, -2; 491, -2 Independent Study (1, 2, or 3)

GREEK

GREK 101, 102 Beginning Greek (4/4, F/S)

Elements of the Koine Greek language. Stress on facility in reading selections from New Testament

and Hellenistic literature. Cultural backgrounds in Greek civilization. This course or its equivalent is a prerequisite for all other Greek courses.

GREK 321 New Testament Greek (4, F)
Grammatical readings and exegetical study of Gospel of John and two epistles. Prerequisite: GREK 102

GREK 191, -2; 291, -2; 391, -2; 491, -2 **Independent Study** (1, 2, or 3)

GREK 301 Classics in Translation (3, S05, 07)
This course surveys the major authors of Greek and Roman epic and classical drama to determine the variety of treatments given to some significant mythological figures. Individual authors, writing in different centuries, according to differing cultures and genres, portray such figures as Odysseus, Agamemnon, Jason and Medea both in traditional and strikingly original ways. (in Engl.)

HEBREW (*Supervised by the Department of Religion and Philosophy*)
HEBR 101, 102 Beginning Hebrew (4/4, F03/S04)
Elements of Biblical Hebrew. Reading from Old Testament.

HEBR 191, -2; 291, -2; 391, -2; 491, -2 **Independent Study** (1, 2, or 3)

LATIN
LATN 101, 102 Beginning Latin (4/4, F03/S04)
Elements of the Latin language. Stress on facility in reading. Cultural backgrounds in Roman civilization. Current relevancy.

LATN 221 Intermediate Latin (4, F04, 06)
Grammar review and introduction to Latin literature. Prerequisite: Beginning Latin (101, 102) or two entrance units of Latin

GENERAL SCIENCE (major)

Department of Physics and Earth Science: Mark E. Yuly, chair

Major (BA, BS): (48 hours)

General Information

The general science major is made up of eight (8) hours each in mathematics, biology, chemistry, physics, and earth science and eight (8) or more hours additional concentration in one of the four science areas in courses numbered 200 or above.

Required courses:

MATH 181, 182 Calculus.....	8
PHYS 151, 152 General Physics.....	8
BIOL 151, 152 General Biology.....	8
CHEM 151, 152 General Chemistry.....	8
ESCI 101 Physical Geology.....	4
ESCI Elective.....	4
Concentration.....	8

For the BS degree, the minor requirement is satisfied if this additional concentration is 12 hours or more. For the BA degree, the 12-hour minor should be from an unrelated area.

HISTORY (majors and minor)

Department of History and Political Science: A. Cameron Airhart, chair

Faculty: A. Cameron Airhart, William Doezema, David Howard

History Major: (27 hours)

This major consists of 27 hours in any history course numbered 200 or above. All majors must take

the Senior History Seminar (HIST 481). The remaining 24 hours are elective, except that no more than two of the courses marked by an asterisk (*) count toward the major. Transfer students have to take at least half of their major at Houghton - at least 12 hours of non-asterisk courses and no more than six hours of asterisk courses.

General Information

The history major involves a strong liberal arts concentration. The major provides excellent background for careers in law, the ministry, public administration, government service, college and secondary teaching, business, foreign service, and preparation for archivists, museum curators, historic site specialists, librarians, editors, and writers.

Augmented History Major: (36 hours)

An augmented history major for certification at the secondary level consists of 36 hours as follows:

ECON 210 Principles of Microeconomics	3
HIST xxx American History (NY history is recommended for students planning to teach in NY state)	3,3
HIST xxx European History	3,3
HIST xxx Non-European, non-American History	3,3
POLS 220 World Regional Geography	3
POLS 222 American Political System	3
Total.....	27
PLUS 9 hours in either	
HIST xxx History Electives	3,3
HIST 481 Senior History Seminar	3
or POLS xxx Political Science Electives	3,3
(both must be major-level courses and one must be at the 300 or 400 level; neither can be POLS 309 or 312)	
POLS 480 Senior Politics Seminar	3
Total.....	9

Minor: The history minor consists of any 12 hours of history courses numbered 200 or above except that no more than one course marked by an asterisk (*) counts toward the minor.

Course Descriptions

HIST 101 Western Civilization I: Ancient Civilization to 1650 (2, F)

Survey of western civilization from its cultural roots in ancient Near Eastern, Greek and Roman civilizations through its development during the Middle Ages, Renaissance, Reformation, and age of discovery and expansion. Attention to analyzing primary source materials. (Reserved for first-year students. Upperclass transfer students may take this course during Mayterm.)

HIST 102 Western Civilization II: 1650 to the Present (2, S)

Survey of western civilization from the rise of science, the Enlightenment, Industrial Revolution, nationalism and other ideologies, two World Wars, the Cold War and beyond. Attention to analyzing primary source materials. (Reserved for first-year students; upperclass students during Mayterm.)

American History

***HIST 213 American Economic History** (3, OD)

Economic and business development of the United States, colonial period to the present. May be counted toward history major/minor or economics minor.

HIST 220 American History Survey (3, F)

Overview of American history to the present.

***HIST 226 New York State History** (May)

This course surveys the Empire State's history from the Colonial period through the present. The state's history is explored in its own right, but attention is also given to showing how New York state in many respects has been a notable microcosm for broader Colonial and national developments.

HIST 359 Colonial America, 1600-1788 (3, F04)

Settlement of North America with emphases upon religious and social developments as well as upon the American Revolution.

HIST 360 Early National Period, 1788-1850 (3, S05)

Establishment of national political institutions and ideologies. Manifest Destiny, institution of slavery, antebellum revivalism and reforms, nascent industrialization.

HIST 361 Civil War and Industrial America, 1850-1920 (3, F03)

Sectionalism and Civil War, Reconstruction, and adaptation to accelerating industrialization and urbanization, and World War I.

HIST 362 Recent American History, 1920 to Present (3, S04)

Immigration, Depression and New Deal, World War II, Cold War, and resurgence of Evangelicalism.

European History

HIST 325 **Europe in the 19th Century (CDRP, see Foreign Languages)** (3, F04)
Growth of liberal democracy, influence of industrial revolution and impact of nationalism. French Revolution to 1890.

HIST 326 **Europe, 1890-1945** (3, S04)
The changing intellectual climate, World War I, problems of inter-war period, challenges to democracy, background of World War II.

HIST 332 **History of Rome** (3, F05)
Survey of Roman history and cultures from the beginning of the republic until the disintegration of the empire, emphasizing political and religious developments.

HIST 368 **The Reformation** (3, F03)
A survey of the continental, English, and Roman Catholic reformation of the 16th century.

HUM 401 **Pagans and Christians: Ancient and Medieval Texts** (3, OD)
Close analysis of some primary texts from ancient medieval times: Plato, Aristotle, Thucydides, Cicero, Augustine, Dante, et al. Develop scholarly skills of research, interpretation, writing; foster awareness of influence of such works on modern thought. Major/minor credit in history.

HIST 430 **English History to 1714** (3, OD)
Roman England to the Stuarts, with attention to constitutional and religious developments.

HIST 431 **English History since 1714** (3, S04)
Hanoverian Britain to the present, with attention to political and social developments.

*HIST 453, 454 **History of Christianity** (3/3, F&S)
Ancient medieval modern development of Christianity in historical context; doctrines, prominent lives, institutions of each era. Fall: ancient through medieval; spring: reformation through modern. Major/minor credit in history, but will not fulfill the secondary social science portion of the integrative studies requirements. (Cross-listed with Theology.)

Regional History

HIST 223 **Latin American History to 1800** (3, F04)
An introductory survey, with attention to cultural interaction during the colonial period.

HIST 224 **Latin American History since 1800** (3, F03)
An introductory survey of Latin America from the revolutionary era to the present.

HIST 249 **African History** (3, S04)
Sub-Saharan Africa from earliest times. Medieval empires of western Sudan, colonial rule, emergence of national states.

*HIST 251 **East African History** (3, S04)
(See Off-Campus Programs section for course description.)

*HIST 306 **Australia History** (3, F03)
(See Off-Campus Programs section for course description.)

*HIST 355 **East Asia: History and Politics** (3, TBA)
Introduction to history and politics of East Asia from ancient time to present, with focus on China and Japan. Emphasis on historical and political developments in 19th and 20th centuries leading to founding of Communist China and new Japan.

*HIST 357 **Russia and the USSR: History and Politics** (3, TBA)
Introduction to Russian and Soviet history and politics from first records to present with focus on government, institutions, culture and society of Imperial and Soviet periods.

HIST 381 **Historiography** (3, OD)
History of historical writings and methods; theories of history.

HIST 295, 395, 495 **Special Topics (CDRP, see Foreign Languages)** (2 or 3, OD)
Group study of selected topics; open only by permission.

HIST 481 **Senior History Seminar** (3, S)
Each student will work with a departmental faculty member to develop or revise a research paper into a substantial historical article. Required for the history major.

HIST 191, -2; 291, -2; 391, -2; 491, -2 **Independent Study** (1, 2 or 3)

HIST 496 **Honors in History** (3, S)

* only one course with asterisk counts toward the minor

HUMANITIES (major)

Department of Religion and Philosophy: Harold Kingdon, chair

Program Director: W. Christopher Stewart

Major: (37 hours)

The interdisciplinary major in humanities consists of an equal emphasis on courses selected from the departments of history, literature, and philosophy. The program encourages students to learn the methodologies of several disciplines, to trace interrelationship among disciplines, and to study common themes and issues from a variety of perspectives. Intensive and extensive study in the intellectual, social, and aesthetic movements of Western culture culminates in a senior paper in which the student has the opportunity to synthesize some of the developments which he or she studies.

Students majoring in humanities often look toward careers in professional fields such as teaching and the Christian ministry. Library services, geriatrics, and elementary education are other career options. This major appeals particularly to students with a broad range of intellectual interests and with a desire to study widely as well as in depth. The program, which involves the departments of History and Political Science, English and Communication, Foreign Languages, and Religion and Philosophy, is administered by the Department of Religion and Philosophy.

Major required courses:

Literature (3 may be in classics or a modern foreign language)	9
History	9
Philosophy	9
Additional course in one of above	3
Art History or	
Music History	3
Elective (with consent of advisor)	3
Humanities Seminar	1

HUM 395 **Special Topics** (1, OD)

HUM 481 **Humanities Seminar** (1, S)

The student undertakes a directed studies project in which he or she produces a paper that synthesizes the historical, literary, and philosophical developments relevant to a selected theme or person.

INTERCULTURAL STUDIES (major and minor)

Faculty: Andrew F. Gallman (Director); Jonathan E. Arensen; Richard K. Eckley; Sherry W. Gallman; Rebecca C. Loaiza; Ronald J. Oakerson; David Pollock; Paul W. Shea

Major: (35-44 hours which includes a 26-hour core plus either nine hours of electives or one 18-hour concentration. The three concentration options are linguistics, missions, or urban studies.)

General Information

The Intercultural Studies major seeks to prepare students to serve effectively as scholar-servants in cross-cultural communities. The major, drawing heavily on the methodologies and perspectives of anthropology and related social sciences, integrates the theory of cross-cultural development work with experiential learning in cross-cultural settings. This major will provide competence for students seeking to serve in such fields as community development, relief work, health services, education, missions, and Bible translation in developing countries and inner-city context.

Students choosing to do a concentration are not required to take a minor. However, if you do not choose to do a concentration, then you will need to choose three electives. You will still be required to do a minor.

Major required courses:

INCL 201 Introduction to Intercultural Studies	3
INCL/SOC 243 Cultural Anthropology	3
INCL/MISS 231 Global Relief and Development	3
INCL/COMM 325 Cross-Cultural Communication	3
INCL/INDS 211 Intercultural Transition and Adjustment	2
INCL (FREN 301/SPAN 301) Conversation-level Frgn Lang	3
(Or substitute a spoken language: Swahili, Arabic, Thai...)	
INCL/INDS 311 Intercultural Experience	4
INCL 482 Senior Intercultural Seminar	2
One of these two:	3
INCL/POLS 320 Community Organization and Development	
INCL/POLS 336 Governance and Politics in Developing Countries	

Optional Linguistics Concentration – 18 hours

Basic Core: (12 hours)	
LING 220 Introduction to Linguistics	3
LING 322 Phonetics	3
LING 323 Phonology	3
LING 333 Grammar.....	3
Special Interests: (choose any two)	
LING 312 Sociolinguistics	3
LING 350 First and Second Language acquisition.....	3
LING 351 TESOL.....	3
LING 355 Theory and Practice of Bilingual Education	3
LING 432 Theory and Practice and Language Learning	3
LING 440 Theory and Practice of TESOL Methodology.....	3

Optional Missions Concentration - 18 hours

Basic Core: (6 hours)	
MISS 221 History of Missions	3
MISS 222 Modern Missions	3
Biblical/Religion Core: (6 hours)	
Required: (3 hours)	
MISS Missions in Biblical and Theological Perspective	
Bible/Missions/Theology/Religion (3 hours)	
Any BIBL course, level 200 or above	
MISS 321 World Religions	
THEL 214 Cultures and New Age	
THEL 215 Christian Apologetics	
Skills/Tools Core: (6 hours any two)	
Ministry skill.....	3
<i>Choice of courses in Educational Ministry or Religion that enhance personal or ministry skills:</i>	
EDMN 325 Bible Study and Teaching Methods	
EDMN 422 Leadership in Ministry	
URMN 212 Urban Ministry	
MISS 395 Special Topics in Missions	
<i>and other options available.</i>	
Cross-cultural Depth	3
<i>Choice of courses to enhance cross-cultural abilities:</i>	
HIST 223 and other Regional Histories	
MHS 254 Music of World Cultures	
Linguistics or Language courses	
relevant courses from Off-Campus Study programs	
MISS 395 Special Topics in Missions	
<i>and other options.</i>	

Optional Urban Ministry Concentration – 18 hours

Urban Ministry Core: (6 hours)	
URMN 212 Urban Ministry	3
URMN 250 Evang. and Social Action in the Urban Context	3
Urban Studies Core: (6 hours)	
SOC 295 Urban Policy	3
SOC 361 Race and Ethnicity (Majority Minority Relations)	3
Skills/Tools Core: (6 hours)	
Similar to missions concentration, through counsel and advisement, students be allowed to sharpen their skills in appropriate areas of ministry or interest from administration to ministry.	

Electives -- 9 hours

Any course listed in the concentrations or listed but not taken as part of the core.

Business and Economics Department	
BADM 313 International Business	
ECON 212 International Economics	
Foreign Language Department	
Another 300+ level Foreign Language course	
History and Political Science Department	
HIST 223 Latin American History	
HIST 249 African History	
HIST 251 East African History	
HIST 355 East Asia: History and Politics	
HIST 357 Russia and the USSR: History and Politics	
POLS 220 World Regional Geography	
POLS 240 Comparative Government	
Music Department	
MHS 254 Music of World Cultures	

Psychology and Sociology Department
 SOC 293 East African Cultures
 SOC 330 Culture, Ethnicity, and the Family
 SOC 338 The Sociology of Religion
 SOC 351 Individual and Society
 Social Science Methodology
 SOC 309 Statistics
 SOC 312 Social Science Research Methods

Minor in Intercultural Studies: (15 hours)

INCL/SOC 243 Cultural Anthropology	3
INCL/COMM 325 Cross-Cultural Communication	3
INCL/INDS 211 Intercultural Transition and Adjustment	2
INCL/INDS 311 Intercultural Experience	4
Choose from:	3
INCL/URMN 212 Urban Ministry	
INCL/LING 220 Introduction to Linguistics	
INCL/MISS 222 Modern Missions	

Course Descriptions (or see specific course under appropriate listing)

INCL 201 Introduction to Intercultural Studies (3,S)

The entry level course for the Intercultural Studies major. Basic presentation of culture and service across cultures. Fundamentals in fields of anthropology, communication, cross cultural living, language learning and linguistics, and missiology will be introduced. Includes survey of options and agencies available for global intercultural service.

INCL/INDS 211 Intercultural Transition and Adjustment (2, F, S, M)

Transition model, cultural shock, cross-cultural conflict, and aspects of intercultural communication as influenced by value dissonance; to enable students to develop realistic, positive expectations about intercultural and interpersonal relationships. Required for students taking INCL/INDS 311.

INCL/MISS 231 Global Relief and Development (3, S)

Survey of the issues and principles involved in addressing the community level human crises in today's world - poverty, hunger, refugees, disease, and underdevelopment. Introduction to a theology of compassion, causes, principles, and case studies. Special attention given to preparing for role of listener, facilitator, and change-agent.

INCL /SOC 243 Cultural Anthropology (CDRP, see Foreign Languages) (3, F)

Cultural and social aspects of human behavior; comparison of cultures.

INCL/INDS 311 Intercultural Experience (4, OD)

Across-cultural experience in an approved setting in an area of service related to student's concentration or field of interest. Preliminary studies and research, the dynamics of living and serving, ongoing mentorship, and periodic reflection will result in journaling and final summary synthesis research paper. This experience may be linked to formal study-abroad programs, official internship affiliation, or pre-approved individual arrangements. Prerequisite: INCL 211

INCL/POLS 320 Community Organization and Development (3, F)

A comparative study of how local communities organize themselves to manage natural resources and provide collective goods and sources. Considers issues related to decentralization and sustainable development. Emphasis in analytic approaches to problem-solving. Prerequisite: INCL 231

INCL/COMM 325 Cross-Cultural Communication (3, F)

Theory and practice in communication across cultural boundaries. Permission of instructor.

INCL/POLS 336 Governance and Politics in Developing Countries (3, OD)

A study of patterns of governance and politics typical of developing countries with an emphasis in relationships between governance and development. Prerequisite: INCL 231

MISS 341 Missions in Biblical and Theological Perspective (3, S04)

An examination of the biblical foundations of missions. The course will explore the extensive Old Testament roots of missions and the New Testament development. It will build a biblical view of culture, worldview, the nature and function of the church, and other relevant topics. Attention will be paid to the application of appropriate principles of biblical theology, exegesis, hermeneutics, and contextualization and to the development of a diachronic approach to scripture.

LING 351 TESOL (Teaching English to Speakers of Other Languages) (3, F)

Review of second language teaching methodologies and learning theories. Examination of some of the unique challenges of English structure (phonological, morphological and syntactical) and the transfer problems that non-native speakers may have. Recommended prerequisite: LING 220

INCL 482 Senior Intercultural Seminar (2, S)
 Joint weekly discussion sessions of all senior majors aimed at reflection on critical broad principles and fine-tuning of abilities for intercultural service. Program faculty assumes team leadership and preparation of topics and format, and they each present a summary session on key issues for the entire seminar. Students each present an approved paper on area of interest stemming from studies and intercultural experience. Several weeks may be set aside for specific disciplines to meet separately for capstone discussions in their field.

INCL 291, 391, 491 Independent Studies (1-3, OD)

INCL 195, 295, 395, 495 Special Topics (1-3, OD)
 Topics offered according to interest and demand.

INTERNATIONAL RELATIONS (major and minor)

Department of History and Political Science: A. Cameron Airhart, chair

Program Director: B. David Benedict

Faculty: B. David Benedict, Robert Black

Major: (38-39 hours, 6 hours prerequisite)

Minor: (15 hours; 3 hours prerequisite)

General Information

This major is an interdisciplinary study of international relations from international politics, international economics, and world community perspectives.

Prerequisites:

ECON 210 Microeconomics3
 POLS 309 Statistics.....3

(counts for first level Integrative Studies credit for social science choices)

The major consists of 38 hours.

Foundational Course:

POLS 230 Introduction to International Relations3

Skills Courses:

COMM 325 Cross-Cultural Communication.....3
 Foreign Language (Conversation and Readings)3
 (Students must have language instruction or demonstrate ability
 at the conversation and reading level in one foreign language)
 POLS 312 Social Science Research Methods3
 INDS 211 Intercultural Transition and Adjustment2
 (is a prerequisite for the Intercultural Experience)

Core Courses: Students must complete six core courses.

Choose *two* International Politics courses:.....6

POLS 240 Comparative Government
 POLS 395 International Relations Theory
 POLS 395 International Law and Organization
 POLS 316 American Foreign Policy
 POLS 395 Governance and Politics in Developing Countries

Choose *two* International Economics/Business courses:.....6

ECON 212 International Economics
 ECON 237 Comparative Economic Systems
 ECON 211 Macroeconomics
 BADM 313 International Business

Choose at least one (3 hours), but not more than two (6 hours), regional histories:

HIST 223, 224 Latin American History.....3, 3
 HIST 249 African History3
 HIST 251 East African History3
 HIST 325,326 European History3, 3
 HIST/POLS 355 East Asia: History and Politics3
 HIST/POLS 357 Russia and USSR: History and Politics3
 HIST 430, 431 English History3, 3
 Or a regional history taught during the Intercultural Experience3

If needed, choose a sixth course from the above Core Course offerings or an equivalent taught during the Intercultural Experience.

Capstone Courses:

INDS 311 Intercultural Experience (Internship)4
 INCL 482 Senior Intercultural Seminar **or**2
 POLS 480 Senior Politics Seminar3

Total: 38-39 hours

Minor: (15 hours; 3 prerequisites)

Prerequisite:
 ECON 210 Microeconomics.....3

Minor:
 POLS 230 Introduction to International Relations3
 International Politics.....3
 (choose one course from list of Int'l Politics courses in major)
 International Economics3
 (choose one course from list of Int'l Economics courses in major)

And both these courses:
 INDS 211 Intercultural Transition and Adjustment.....2
 INDS 311 Intercultural Experience.....4

Course Descriptions

INDS 211 Intercultural Transition and Adjustment (2, F&S)
 Transition model, cultural shock, cross-cultural conflict, and aspects of intercultural communication as influenced by value dissonance; to enable students to develop realistic, positive expectations about intercultural and interpersonal relationships. Required for students taking INCL/INDS 311.

INDS 311 Intercultural Experience (4, OD)
 A cross-cultural experience in an approved setting in an area of service related to student's concentration or field of interest. Preliminary studies and research, the dynamics of living and serving, ongoing mentorship, and periodic reflection will result in journaling and final summary synthesis research paper. This experience may be linked to formal study-abroad programs, official internship affiliation, or pre-approved individual arrangements. Prerequisite: INCL 211

LATIN (see Foreign Languages)

LINGUISTICS (minor)

Department of Foreign Languages and Linguistics: Andrew Gallman, chair
Faculty: Andrew Gallman, Sherry Gallman, Rebecca Loaiza

Minor: (15 hours) This minor is taught in conjunction with the Summer Institute of Linguistics (Wycliffe Bible Translators).

Required courses:

LING 220 Introduction to Linguistics	3
LING 322 Phonetics	3
LING 323 Phonology I.....	3
LING 333 Grammar I.....	3
One additional course from LING.....	3

Linguistics courses are useful to anyone expecting to learn or work with languages; foreign language majors, English as a second language students, people interested in TESL as a career, people interested in missions and international business, education majors facing multilingual classrooms, are a few examples. Philosophy and psychology students find the areas of semantics and phonology to overlap with their fields of interest. Math majors have found the analysis procedures of linguistics to require similar thinking skills to higher mathematics, and linguistics has provided them a real world application of mathematics training.

Course Descriptions

LING 220 Introduction to Linguistics (3, F,S)
 An introduction to the basic elements of linguistics. Emphasis on phonology (the study of sounds), morphology (the study of word formation), syntax (phrase and sentence formation), and semantics (meaning in language).

LING 312 Sociolinguistics (3, S)
 Focuses on language use patterns in multilingual societies: language maintenance and death; language attitudes; language planning; Pidgins and Creoles.

LING 322 Phonetics (3, F)
 An introduction to the theory and practice of articulatory phonetics; intensive drill in definition, recognition, production, and transcription of the whole range of sounds used in human speech.

LING 323 Phonology I (3, F)

The principles involved in the analysis of sound systems with extensive practice in the phonological analysis of material from a wide variety of languages. Prerequisite/co-requisite: LING 322 Phonetics.

LING 333 **Grammar I** (3, S)
Principles and techniques of the analysis of morphological and syntactic structures of language.

LING 351 **TESOL** (Teaching English to Speakers of Other Languages) (3, F)
Review of second language teaching methodologies and learning theories. Examination of some of the unique challenges of English structure (phonological, morphological and syntactical) and the transfer problems that non-native speakers may have. Recommended prereq: LING 220.

LING 355 **Theory and Practice of Bilingual Education** (3, S)
Designed as an introduction to bilingual education and bilingualism. Study of the sociolinguistic and psycholinguistic issues that surround bilingualism and bilingual education. An attempt is made to balance the psychological and the sociological, the macro education issues and the micro classroom issues, the linguistic and the sociopolitical, and to balance discussion at the individual and societal levels. Recommended prereq: LING 220.

LING 295, 395, 495 **Special Topics** (1-3, OD)
These offerings will take advantage of faculty expertise to focus on advanced linguistic topics of interest to the student body. The first offering will be during the Houghton in Tanzania program, focusing on African language structure. The course may be repeated for different topics. Prerequisites to be determined at the time of offering.

LING 291, -2; 391, -2; 491, -2 **Independent Study** (1, 2, or 3)

MATHEMATICS (major and minor)

Department of Mathematics and Computer Science: Richard Jacobson, chair
Faculty: Wei Hu, Richard Jacobson, David Perkins, Paul Watson

Major: (28 hours)

Required courses:

MATH 181, 182 Calculus I, II.....	8
MATH 261 Linear Algebra.....	4
MATH 482 Mathematics Seminar.....	2
Other courses 181 or above.....	14

Highly recommended for teachers of math:

MATH 251 Modern Geometries
MATH 462 Algebra
MATH 291 History of Mathematics

Teaching Mathematics - Childhood (Elementary) or Adolescence (Secondary): See Education

Minor: (14 hours numbered 181 or above)

General Information

Many of our graduates enter the teaching profession. However, the math majors are also well prepared to pursue graduate work in engineering, computer science, law, theology, and the medical profession, as well as mathematics. Most of our students who complete a PhD program in mathematics are now college professors. Those who do not pursue an advanced degree find employment in a multitude of fields, ranging from the banking profession to Bible translators with Wycliffe. A number of our math majors find careers in the computer field.

Course Descriptions

MATH 107 Pre-Calculus (3, F&S)

A contemporary approach to precalculus mathematics, including linear, quadratic, exponential and trigonometric functions as well as introductory probability concepts. Incorporation of peer group work with a strong emphasis on graphing technology. Meets math integrative studies requirement as well as preparing students for calculus.

MATH 110 Analytic Pre-Calculus (3, F&S)

A contemporary approach to pre-calculus mathematics which includes linear, quadratic, exponential and trigonometric functions in addition to introductory probability concepts. Special emphasis will be placed in formulating and evaluating real-life problems that require pre-calculus analysis. There is a strong emphasis on the use of graphing technology. Cannot be taken in addition to MATH 107. Enrollment by invitation only.

- MATH 181 Calculus I** (4, F&S)
Single variable calculus of algebraic and trigonometric functions. Applications involving maximum, minimum, and related rates. Intensive use of graphing calculators and computer software. Prerequisite: MATH 107 or equivalent proficiency.
- MATH 182 Calculus II** (4, F&S)
Areas, volumes, centroids, integration techniques, calculus of transcendental functions, infinite series. Prerequisite: MATH 181
- MATH 190 Mathematical Applications and Issues** (2, S)
A survey of various problems encountered in present day mathematics as well as vocational opportunities available to mathematicians. Pre-requisite: MATH 181 or permission
- MATH 214 Discrete Mathematics** (3, F 03, 05)
Topics include: sets, functions, relations (incl. Partial order), methods of propositional logic, introduction to predicate logic, counting, recurrence relations, asymptotic analysis, proof (incl. Induction), introduction to probability, graphs.
- MATH 231 Probability** (3, F03)
Combinatorics, independence, conditional probability, discrete and continuous random variables, expected value and variance. Prerequisite: MATH 182
- MATH 232 Mathematical Statistics** (3, F04)
Probability theory, random variables, sampling, estimation, hypothesis testing and linear regression. This course emphasizes the mathematical rather than the applied features of statistics. Prerequisite: MATH 182
- MATH 241 Differential Equations** (3, F&S)
Methods of solution and applications of principle types of differential equations. Prerequisite: MATH 182
- MATH 251 Modern Geometries** (3, S)
A survey of geometry including advanced Euclidean geometry and an introduction to non-Euclidean geometries. Prerequisite: MATH 182
- MATH 261 Linear Algebra** (4, F&S)
Linear algebra: vector spaces, linear mappings, inner products and matrices. Prerequisite: MATH 181
- MATH 281 History of Mathematics** (3, M)
A contextual study of the history of mathematics and some of the classical problems. Prerequisite: MATH 182
- MATH 321 Multivariate Calculus** (3, F)
Infinite series, space geometry, vectors, vector function, function of several variables, partial differentiation, multiple integration. Prerequisite: MATH 182
- MATH 331 Numerical Analysis** (3, S04)
Representation of numeric data. Error analysis, mathematical basis, and limitations of techniques relating to selection of method. Topics: linear and nonlinear systems, curve fitting, numerical calculus, programming in MatLab. Prerequisite: MATH 181
- MATH 422 Advanced Calculus** (3, F04)
Structure of the real number system, theory of limit, continuity, differentiation, Riemann integration, and infinite series. Prerequisites: MATH 321 and MATH 261, or permission
- MATH 452 Point Set Topology** (3, S04)
Open and closed sets. Connected, compact, and metric topological spaces. Prerequisite: MATH 261
- MATH 462 Algebra I** (3, S05)
Groups, Sylow theorems, rings and fields. Prerequisite: MATH 261
- MATH 471 Complex Analysis** (3, S05)
Complex number system, limits, differentiation and integration in the complex plane, complex series. Prerequisites: MATH 321 and MATH 261, or permission
- MATH 482 Mathematics Seminar** (2, S)
Acapstone course which draws on many other courses. Emphases on formulating, solving, and explaining challenging problems in both verbal and written form. For seniors, except by permission.
- MATH 391, -2; 491, -2 Independent Study** (1, 2 or 3)
- MATH 295, -6; 395, -6; 495 Special Topics in Mathematics** (1, 2 or 3)
A survey of topics not covered in other mathematics classes, including graph theory, computation theory, infinite cardinalities, and Galois theory.

MEDICAL TECHNOLOGY - with a major in Biology (BS)

Department of Biology: James M. Wolfe, chair

Faculty: As determined by chair.

Adjunct Faculty: Joseph King, Brian Spezialetti

The program in medical technology which leads to a BS in biology requires that the student complete 94 hours of course work at Houghton College and then transfer to Robert Packer Hospital (Sayre, Pa.) or another approved program to complete a major in biology and a minor in chemistry.

The following courses must be taken at Houghton:

All integrative studies requirements	
BIOL 151, 152 General Biology	8
BIOL 242 Microbiology	4
BIOL 251 Genetics	4
BIOL 281 Introduction to Research	1
BIOL 365 Immunology	4
CHEM 151, 152 General Chemistry	4, 4
CHEM 241 Organic Chemistry I	4, 4
CHEM 277 Analytical Chemistry	4
MATH 107 Pre-Calculus or	3
MATH 181 Calculus I	4

If a student plans to attend a nonaffiliated medical technology program, s/he must petition for approval of the program during his/her junior year. Enrollment in hospital programs is limited by small class size, and there is no guarantee of admission. Usually a cumulative grade point average of at least 3.0 is needed in order to be a successful applicant. Students who choose not to continue in the medical technology (clinical laboratory science) program or who are not admitted to the professional curriculum may complete a year in biology or general science during the senior year.

Following successful completion of the senior year in the hospital program, students are qualified to sit for the national certification exams. These are administered by the Board of Registry of Medical Technologists and the National Certification Agency for Medical Laboratory Personnel.

MINISTRY – See the following headings:

Christian Ministries (AAS)

Church Ministries

Educational Ministries (incl. Youth Concentration option)

Missions

Pastoral and Church Ministries Program (AAS), in Adult Learning

Opportunities section

Religion (incl. Ministerial Concentration option)

Urban Ministry

MISSIONS (minor, see also Intercultural Studies mission concentration)

Department of Religion and Philosophy: Harold Kingdon, chair

Faculty: Paul Shea

Minor: (12 hours) Most students minoring in missions will include the highly recommended Cross-Cultural Field Experience in addition to the 12 hours of regular course work.

Required courses:

MISS 221 History of Missions	3
MISS 222 Modern Missions	3
Minor elective credit chosen from:	6
MISS 231 Global Relief and Development	
MISS 311 Cross-Cultural Field Experience	
MISS/THEL 321 World Religions	
MISS 341 Missions in Biblical and Theological Perspective	
MISS 395 Special Topics in Missions	

Course Descriptions

- MISS 221 History of Missions** (3, F)
Missions from apostolic days to present. Changing concepts of missions. Contributions of outstanding leaders. (Liberal arts credit)
- MISS 222 Modern Missions** (3, S)
Survey the contemporary state of the global church and its mission; introduction to theology of missions, goals, and strategies; special attention to current trends, issues, and research.
- MISS 231 Global Relief and Development** (3, F)
A survey of the underlying theology, principles, and methods involved in addressing the human crises in today's world – poverty, hunger, disaster, disease, refugees, and underdevelopment. Focuses on Christians' responsibility as change-agents at the community level. An interdisciplinary approach incorporates theology, missiology, economics, and social sciences seeking to balance theory with concrete case studies and modest hands-on experience and debriefing.
- MISS 300 Christianity and Postmodernism** (3, F)
(See course description in Off-Campus Programs-Australia section.)
- MISS 311 Cross Cultural Field Experience** (3)
Introduction to mission work through pre-approved cross-cultural ministry either overseas or in North America. Guided readings and a project are required in consultation with the instructor. INDS 211 Intercultural Transition and Adjustment is recommended.
- MISS 321 World Religions** (3, S)
Background, major teachings of Eastern religious and philosophical thought. Emphases on understanding and evaluating non-Western ideas and practices.
- MISS 325 Life in the City** (3, F)
(See course description in Off-Campus Programs-Australia section.)
- MISS 341 Missions in Biblical and Theological Perspective** (S, 04, 06)
An examination of the biblical foundations of missions. The course will explore the extensive Old Testament roots of missions and the New Testament and development. It will build a biblical view of culture, worldview, the nature and function of the church, and other relevant topics. Attention will be paid to the application of appropriate principles of biblical theology, exegesis, hermeneutics, and contextualization and to the development of a diachronic approach to scripture.
- MISS 395 Special Topics in Missions** (3, OD)
Topics offered according to interest and demand.
- MISS 191, -2; 291, -2; 391, -2; 491, -2 Independent Study** (1, 2 or 3 hours)

MUSIC (undergraduate majors and minors)*

Greatbatch School of Music: Ben R. King (director & associate dean for music)

Faculty: Heather M. Armstrong, Shirley S. Close, Judy A. Congdon, Paul T. DeBoer, Robert J. Galloway, Mark L. Hartman, Mark D. Hijleh, Brandon P. Johnson, Ben R. King, William J. Newbrough, B. Jean Reigles, Gary M. Stith

Part-time & Adjunct: Nina Assimakopoulos, Melissa Burton, Amanda Young Cox, Allison Franco, Anthony Franco, Dolores Gadevsky, Nan Gullo, Virginia Halberg, Kelley Hijleh, Paul Kroll, Donna Lorenzo, Anton Machleder, James Tiller, Ed Wadin; others as appropriate from the Buffalo and Rochester Philharmonic orchestras

*See Graduate Bulletin for information regarding graduate curricula, faculty, and courses.

E-mail & Webpage: music@houghton.edu; campus.houghton.edu/depts/music/

Mission

Within a Christ-centered, challenging, liberal arts education, the Greatbatch School of Music, Houghton College endeavors to produce graduates who, through commitment to musical excellence and to intelligent articulation of the integration of faith and music in their lives, can be effective musical practitioners and advocates in the Christian community and in the broader world.

Accreditation

The Greatbatch School of Music is a full member of the National Association of Schools of Music, and its curricula conform to NASM published standards.

Majors: Music (BA: 36-37 hours), Church Ministries (BA/BS: Bible major + 37-hour music concentration); Performance (BMus: hours variable), Music Education (BMus: hours variable), Composition (BMus: hours variable)

Minors: Performance and contract minors available (16 hours).

Liberal arts study in the Greatbatch School of Music, Houghton College

Liberal arts students may study privately on a credit basis, may elect major or minor concentrations in music, and may participate in music ensembles. No more than eight hours of applied music may count toward graduation for students who are not majoring or minoring in music.

Liberal Arts Music Major (BA)

Course requirements (listed in catalog order):

MAP LL10-25	Applied Music (6 hours at or above LL20)	12
MUS —	Ensembles (4 sem., with or w/o credit)	0
MHS 231-334	Music History and Literature I-IV (any 2)	5-6
MLT 211	Music & Listening: an introduction	3
MUS 250	Music & Christian Perspective	2
MTH 227-228	Aural Skills I-II	2
MTH 225-226	Theory I-II	6
—	Electives in Music (211 or above)	6
	Total:	36-37

The BA degree in music can be combined with other curricula in a double major. Business administration, communication, and psychology are combinations often selected. These combinations are valuable for those wishing to work in some aspect of the music industry. Suggested course sequences may be found in the Music Student Handbook. An audition is required to establish an appropriate performance course level.

During four semesters in the BA music curriculum, the student must maintain membership in a major ensemble (see ensembles section) with or without credit. Choice of ensemble is made with the School of Music director's approval.

The recital attendance requirement is ten performances per semester for BA majors, for any four semesters of residence.

Church Ministries (BS)

In cooperation with the Department of Religion and Philosophy, the Greatbatch School of Music offers a music concentration to complement a major in Bible or educational ministries for BS in church ministries. The objective is to provide a basic musical background for the pastor and/or Christian education director who must handle the service music in a small church setting.

Course requirements for music concentration in church ministries major (listed in catalog order):

MAP VO10+	Voice	6
MAP PI, OR, GU	Piano, Organ or Guitar any level.....	5
MCHU 416	Introduction to Hymnology	2
MCHU 301	Church Music Administration	2
MCHU 351	Music & Worship	3
MUS 229, 329	Basic, Choral Conducting.....	4
MUS —	Ensemble (4 semester req.)	0-2
MLT 211	Music & Listening: an introduction	3
MUS 250	Music & Christian Perspective	2
MTH 225	Theory I-II	6
MTH 227	Aural Skills I-II	2
	Total:	35-37

A music audition is required to establish an appropriate performance course level. Contact the director of the Greatbatch School of Music. For further information regarding the Bible or educational ministries majors, contact the Department of Religion and Philosophy.

Recital attendance and ensemble participation policies conform to those for BA music majors (above).

Bachelor of Music - Entrance requirements for music majors

Students planning to pursue Bachelor of Music curricula should request a special music application when applying for admission to the college. An entrance audition in the major performing area is required. A schedule of such auditions is available from the Greatbatch School of Music. A tape-recorded audition may be sent, by permission of the director, in cases where an in-person audition is

not possible. All appropriate forms, guidelines, supplemental information, and scholarship information available through the music office. Call 1-800-777-2556 or send e-mail to request these.

Transfer students

Students transferring to Houghton and intending a Bachelor of Music curricula should follow the entrance and application procedures outlined above. In addition, transfer students must complete at least four semester hours at Houghton in their major applied area, regardless of achievement or previous hours completed.

Integrative Studies Requirements - Bachelor of Music Curricula

As part of all bachelor of music curricula, students are required to have 32-36 hours of integrative studies credits, including the following:

FYI (First-Year Introduction).....	1
Biblical Literature	3
Principles of Writing	3
Research requirement	0
Foreign Language (see note*)	4-12
Literature of the Western World.....	3
Western Civilization.....	4
Lifetime Wellness or Activity course	1
One advanced Bible course or Intro to Christianity.....	3

*The minimum requirement for Music Education-Instrumental (MEI), Music Education-Combined (MEC-I or V), and Composition majors is four hours of beginning foreign language. The minimum requirement for Music Education-Voice (MEV) majors, and for Instrumental Performance majors, is eight hours of foreign language, normally either French or German. The minimum requirement for Vocal Performance majors is eight hours of beginning language in either French or German, and four hours of beginning language in the other language. Music majors may satisfy these requirements via placement exam, CLEP, or AP exam. [The Greatbatch School of Music may advise additional foreign language study for some B.Mus. students.]

Music Education majors add:

Introduction to Psychology.....	3
Physics of Music	2

Add liberal arts electives to equal 36 hours, or 32 hours for music education combined curricula (MEC-I or -V).

Bachelor of Music in Composition

The composition curricula provides a foundation for graduate degree study leading to college/conservatory teaching credentials in composition and theory, as well as professional and/or commercial compositional activity. Students explore a wide variety of musical styles with an emphasis on understanding compositional techniques which may be less familiar to them, such as those of 20th-century art music. The senior recital requirement may be met by either a full recital of original compositions, or by a half recital of original compositions plus an original work of significant length and form included in another performance. The composer must serve as a performer or conductor for at least one of the pieces on the senior recital.

Course requirements (listed in catalog order):

MAP CM40-45 Applied Composition.....	16
MAP LL20+ Applied Music (Required piano: min. 4 hours at or above PI20)	6-18
MUS 229 Basic Conducting	2
MUS 329 Choral Conducting or	2
MUS 430 Instrumental Conducting	2
MUS—Ensembles (with or without credit-8 semesters)	0
MED 214 Woodwind Instruments	1
MED 215 String Instruments	1
MED 217 Brass Instruments.....	1
MED 218 Percussion Instruments.....	1
MHS 231-334 Music History and Literature I-IV.....	10
MUS 250 Music & Christian Perspective.....	2
MUS 356 Vocal Pedagogy (Voice concentration only).....	(2)
MUS 485 Senior Recital	0
MTH 227-328 Aural Skills I-IV.....	4
MTH 225-326 Theory I-IV.....	12
Advanced theory, chosen from:	6
MTH 458 Sixteenth Century Counterpoint (3) or	
MTH 475 Synthesizer Computer Applications (3) or	
MTH 463 Form and Analysis (3)	
Total:.....	76-78

Entering Composition majors are expected to have piano proficiency equivalent to completion of at least three hours of PI10, and LL20 in the major applied area. Required graduation levels are min. four hours of piano at or above PI20 and min. 6 hours at or above LL30 in the major applied area.

Music Education

Music Education curricula prepare students for teaching music in grades K-12. Entrance levels and graduation requirements vary for the four curricula as outlined below. These curricula meet all teacher certification requirements of the Board of Regents of the University of the State of New York.

Bachelor of Music in Music Education – Instrumental emphasis (MEI)

Music Courses (listed in catalog order):		Hours
MAP LL20-45	Applied Concentration (min. 9 hrs at or above LL40)	19
MAP VO10	Voice	1
MCHU 477	Service Playing, Piano (keyboard concentration only)	(1)
MUS 229	Basic Conducting	2
MUS 430	Instrumental Conducting	2
MED 214-218	WW, St, Br, Prc Instruments	4
MED 330	Keyboard Skills (Keyboard concentration only)	(2)
MUS –	Ensembles (7 sem., with or w/o credit)	0
MUS 223	Jazz Workshop	1
MKBD I-III	Practical Keyboard I-III (Instr. concentration only)	(0-3)
MHS 231-334	Music History and Literature I-IV	10
MUS 250	Music & Christian Perspective	2
MUS 485	Senior Recital	0
MTH 225-326	Music Theory I-IV	12
MTH 227-328	Aural Skills/Ear Training I-IV	4
MTH 367	Elementary Composition and Orchestration	2
	Total:	62
Professional Education:		Hours
EDUC 201	Instructional Psychology and Research	3
EDUC 217	History and Philosophy of Education or	3
EDUC 218	History & Philosophy of Secondary Education	
EDUC 320	Instructional Environments for Diverse Learners or	3
EDUC 414	Educating Exceptional Children	
MED 210	Field Experience in Music Education	2
MED 227-242	St, Br, Prc, WW Techniques	7
MED 351	Elementary School Methods or	
MED 352	Secondary School Methods	2
MED 354	Instrumental Methods	2
MED 405	Student Teaching	12
MED 419	Student Teaching Seminar	2
	Total:	36

Bachelor of Music in Music Education – Vocal emphasis (MEV)

Music Courses:		Hours
MAP LL20-45	Applied Concentration (min. 9 hrs at or above LL40)	19
MAP VO 10	Voice (Keyboard concentration only)	(2)
MCHU	Service Playing, Piano (Keyboard concentration only)	(1)
MUS 229	Basic Conducting	2
MUS 329	Choral Conducting	2
MED 214-218	WW, St, Br, Prc Instruments	4
MED 330	Keyboard Skills (Keyboard concentration only)	(2)
MUS –	Ensembles (7 sem., with or w/o credit)	0
MUS 353	Opera Workshop	1
MKBD I-VI	Practical Keyboard I-VI (Voice concentration only)	0-6
MHS 231-334	Music History and Literature I-IV	10
MUS 219-220	Foreign Language Diction (Voice concentration only)	(2)
MUS 250	Music & Christian Perspective	2
MUS 356	Vocal Pedagogy (Voice concentration only)	(2)
MUS 485	Senior Recital	0
MTH 227-328	Aural Skills/Ear Training I-IV	4
MTH 225-326	Music Theory I-IV	12
MTH 367	Elementary Composition and Orchestration	2
	Total:	63-68
Professional Education:		Hours
EDUC 201	Instructional Psychology and Research	3
EDUC 217	History and Philosophy of Education or	3
EDUC 218	History & Philosophy of Secondary Education	
EDUC 320	Instructional Environments for Diverse Learners or	3
EDUC 414	Educating Exceptional Children	
MED 210	Field Experience in Music Education	2
MED 227-242	St, Br, Prc, WW Techniques	7
MED 351	Elementary School Methods or	
MED 352	Secondary School Methods	2

MED 354	Instrumental Methods.....	2
MED 405	Student Teaching	12
MED 419	Student Teaching Seminar.....	2
	Total:	36

Bachelor of Music in Music Education – Instrumental combined emphasis (MEC-I)

Music Courses:		Hours
MAP LL20-45	Applied Concentration (min. 9 hrs at or above LL40)	19
MAP VO10+	Voice	3
MCHU	Service Playing, Piano (Keyboard concentration only).....	(1)
MUS 229	Basic Conducting	2
MUS 430	Instrumental Conducting	2
MED 214-218	WW, St, Br, Prc Instruments	4
MED 330	Keyboard Skills (Keyboard concentration only)	(2)
MUS –	Ensembles (7 sem., with or w/o credit)	0
MUS 223	Jazz Workshop.....	1
MHS 231-334	Music History and Literature I-IV.....	10
MKBD I-IV	Practical Keyboard I-IV (Instr. concentration only)	(0-4)
MUS 250	Music & Christian Perspective	2
MUS 485	Senior Recital.....	0
MTH 227-328	Aural Skills/Ear Training I-IV	4
MTH 225-326	Music Theory I-IV.....	12
MTH 367	Elementary Composition and Orchestration.....	2
	Total:	64-65

Professional Education:		Hours
EDUC 201	Instructional Psychology and Research.....	3
EDUC 217	History and Philosophy of Education or	3
EDUC 218	History & Philosophy of Secondary Education	
EDUC 320	Instructional Environments for Diverse Learners or	3
EDUC 414	Educating Exceptional Children	
MED 210	Field Experience in Music Education	2
MED 227-242	St, Br, Prc, WW Techniques	7
MED 351	Elementary School Methods or	
MED 352	Secondary School Methods	2
MED 354	Instrumental Methods.....	2
MED 405	Student Teaching	12
MED 419	Student Teaching Seminar.....	2
	Total:	36

Bachelor of Music in Music Education – Vocal combined emphasis (MEC-V)

Music Courses:		Hours
MAP –	Applied Concentration (min. 9 hrs at or above LL40)	19
MAP VO 10	Voice (Keyboard concentration. only)	(4)
MCHU	Service Playing, Piano (Keyboard concentration only).....	(1)
MUS 229	Basic Conducting	2
MUS 329	Choral Conducting.....	2
MED 214-218	WW, St, Br, Prc Instruments	4
MED 330	Keyboard Skills (Keyboard concentration only)	(2)
MUS –	Ensembles (7sem., with or w/o credit)	0
MUS 353	Opera Workshop.....	1
MKBD I-VI	Practical Keyboard I-VI (Voice concentration only)	0-6
MHS 231-334	Music History and Literature I-IV.....	10
MUS 219-220	Foreign Language Diction (Voice concentration only).....	(2)
MUS 250	Music & Christian Perspective	2
MUS 356	Vocal Pedagogy (Voice concentration only).....	(2)
MUS 485	Senior Recital.....	0
MTH 227-328	Aural Skills/Ear Training I-IV	4
MTH 225-326	Music Theory I-IV.....	12
MTH 367	Elementary Composition and Orchestration.....	2
	Total:	65-68

Professional Education:		Hours
EDUC 201	Instructional Psychology and Research.....	3
EDUC 217	History and Philosophy of Education or	3
EDUC 218	History & Philosophy of Secondary Education	
EDUC 320	Instructional Environments for Diverse Learners or	3
EDUC 414	Educating Exceptional Children	
MED 210	Field Experience in Music Education	2
MED 227-242	St, Br, Prc, WW Techniques	7
MED 351	Elementary School Methods or	

MED 352	Secondary School Methods	2
MED 354	Instrumental Methods.....	2
MED 405	Student Teaching	12
MED 419	Student Teaching Seminar	2
	Total:	36

Bachelor of Music in Music Education – Alternate Applied Concentration in Composition (MEV-C or MEI-C)

An alternate curricular plan in music education (for students with either vocal or instrumental emphasis) with a concentration in composition is available for qualified students. The Bachelor of Music in Music Education curricula outlined above form the core, with the following changes:

Music Courses:	Hours
MAP Applied Music (at or above LL 20).....	10
MAP CM40-45 Applied Composition	6
Advanced theory chosen from.....	3
MTH 458 Sixteenth Century Counterpoint (3) or	
MTH 475 Synthesizer Computer Applications (3) or	
MTH 463 Form and Analysis (3)	
MUS 485 Recital (Composition)	0

Students pursuing this major must meet the entrance and graduation proficiency requirements cited under the BMus Composition major.

Performance curricula give initial preparation for careers as solo performers in concert, recording, or church fields; as accompanists, as private studio teachers; as professional ensemble members; as junior college or Bible school faculty, or college teachers (after advanced study). Practical experience in teaching is desirable during junior/senior years. Highest level of performance is expected. Course requirements are listed in catalog order:

Bachelor of Music in Performance – Instruments: Brass, Guitar, Strings, or Woodwinds

MAP LL30-45 Major Applied Studies (min. 16 hours at or above LL40)	30
MAP LL20+ Applied minor in major family	4
MAP CM40 Applied (private) composition or	
MTH 367 Elementary Composition and Orchestration	2
MAP PI10 Piano	3
MUS 229 Basic Conducting	2
MUS 430 Instrumental Conducting.....	2
MUS – Ensembles (with or without credit -- 8 semesters)	0
MED 241 Brass Techniques (2) or	
MED 242 Woodwind Techniques (2) or	
MED 227 String Techniques (2)	2
MUS 250 Music & Christian Perspective.....	2
MUS 385, 485 Junior and Senior Recitals.....	0
MTH 227-328 Aural Skills I-IV	4
MTH 225-326 Theory I-IV	12
MHS 231-334 Music History and Literature I-IV	10
Advanced theory, chosen from:	6
MTH 458 Sixteenth Century Counterpoint (3)	
MTH 475 Synthesizer Computer Applications (3)	
MTH 463 Form and Analysis (3)	
Total:.....	79

Bachelor of Music in Performance – Organ

MAP OR30-45 Organ (min. 16 hours at or above OR40)	30
MAP PI20+ Piano (at or above PI20)	5
MAP CM40 Applied (private) composition or	
MTH 367 Elementary Composition and Orchestration	2
MCHU 476 Service Playing	2
MUS 229 Basic Conducting	2
MUS – Ensembles (with or without credit -- 8 semesters)	0
MHS 231-334 Music History and Literature I-IV	10
MLT 470 Organ Literature.....	2
MUS 250 Music & Christian Perspective.....	2
MUS 470 Organ Pedagogy.....	2
MUS 385, 485 Junior and Senior Recitals.....	0
MTH 227-328 Aural Skills I-IV	4
MTH 225-326 Theory I-IV	12
Advanced theory, chosen from:.....	6
MTH 458 Sixteenth Century Counterpoint (3)	
MTH 475 Synthesizer Computer Applications (3)	

MTH 463	Form and Analysis (3)	
	Total:.....	79

Bachelor of Music in Performance – Piano

MAP PI30-45	Piano (min. 16 hours at or above PI40)	30
MAP –	Applied Minor (organ strongly recommended).....	5
MAP CM40	Applied (private) composition or	
MTH 367	Elementary Composition and Orchestration	2
MUS 229	Basic Conducting	2
MED 330	Keyboard Skills.....	2
MUS –	Ensembles (with or without credit -- 8 semesters).....	0
MHS 231-334	Music History and Literature I-IV	10
MLT 480	Piano Literature.....	2
MUS 250	Music & Christian Perspective.....	2
MUS 477	Piano Pedagogy I	2
MUS 478	Piano Pedagogy II	2
MUS 385, 485	Junior and Senior Recitals.....	0
MTH 227-328	Aural Skills I-IV	4
MTH 225-326	Theory I-IV	12
Advanced theory, chosen from:.....		6
MTH 458	Sixteenth Century Counterpoint (3)	
MTH 475	Synthesizer Computer Applications (3)	
MTH 463	Form and Analysis (3)	
	Total:.....	81

Bachelor of Music in Performance – Voice

MAP VO30-45	Voice (min. 16 hours at or above VO40)	28
MAP PI20+	Piano	6
MAP CM40	Applied (private) composition or	
MTH 367	Elementary Composition and Orchestration	2
MCHU 416	Hymnology	2
MUS –	Ensembles (with or without credit -- 8 semesters).....	0
MUS 229	Basic Conducting	2
MUS 329	Choral Conducting	2
MHS 231-334	Music History and Literature I-IV	10
MUS 219-220	Foreign Language Diction	2
MUS 250	Music and Christian Perspective	2
MUS 356	Vocal Pedagogy	2
MUS 385, 485	Junior and Senior Recitals.....	0
MTH 227-328	Aural Skills I-IV	4
MTH 225-326	Theory I-IV	12
Advanced theory, chosen from:		6
MTH 458	Sixteenth Century Counterpoint (3) or	
MTH 475	Synthesizer Computer Applications (3) or	
MTH 463	Form and Analysis (3)	
	Total:	80

Contract minor in music

A 16-hour contract minor as determined by arrangement with the director of the Greatbatch School of Music. A special course of study is developed to meet the student’s specific goals and is signed prior to the taking of the courses. The signed course of study is placed on file in the Academic Records Office.

Performance minor

Sixteen hours in one specific performance area (eight hours at or above LL20 and one year in an appropriate ensemble). Audition and permission of the director of the Greatbatch School of Music required. Limited enrollment in some areas based on teacher load availability.

Instrumental and Vocal: voice, violin, viola, violoncello, double bass, guitar, trumpet, French horn, trombone, euphonium, tuba, flute, oboe, clarinet, saxophone, bassoon, percussion
14 hours of applied music
2 hours of ensemble

Keyboard: 14 hours of piano (10 hours at or above PI30)
14 hours of organ (6 hours of piano at or above PI10 *and* 10 hours of organ at or above OR20, *or* 14 hours of organ at or above OR20)
2 hours of ensemble

Short Course in Organ

Students interested in developing an organ technique for modest church requirements may elect

a number of hours in organ, taking a minimum of one hour of practice per day, five days a week, for one hour credit per semester, or six days' practice a week for two hours' credit. Four semesters of such study will ordinarily suffice, although further work is encouraged. (Regular or intensified study is also available in summer school.)

Summer School

Applied music lessons and composition may be taken for credit during summer school, depending on instructor availability.

Course Descriptions

Applied Study (private lesson fees charged, see catalog pp. 12-13)

Applied (private lesson) study is available only by permission of the appropriate studio faculty, and requires an audition. May be taken for major, minor, or elective credit. Each level number must be taken for a minimum of three credit hours before advancing to the next number. Applied study does not carry Integrative Studies first-level credit.

Course Numbering in Applied Study (all performance areas; LL = instrument code):

MAP LL10, LL15 (1-4, F&S)

Normal level for introductory private study, non-majors. Permission of appropriate studio faculty. For voice: successful completion of MCLV II or permission. For piano: successful completion of MKBD IV or permission.

MAP LL20, LL25 (1-4, F&S)

Normal level for beginning private study, music education majors. Audition required, or prerequisite of LL15 and permission of studio faculty.

MAP LL30, LL35 (1-6, F&S)

Normal level for beginning private study, performance majors; intermediate private study, music education majors, minors, and elective study. Audition required, or LL20-25 as prerequisite. May be repeated for two additional semesters.

MAP LL40, LL45 (1-6, F&S)

Advanced private study for B.Mus. majors. Prerequisite: FH 30-35 and successful Sophomore Review, or permission of studio faculty. Repeatable as required

Areas of Applied Study

Composition

MAP CM40, CM 45 **Composition** (1-4, F&S)

Original composition in various forms, genres, and styles.

Conducting

MAP CC40, CC45 **Advanced Conducting, Choral** (1-4, F&S)

Preparation of material for a major choral ensemble and actual experience directing the ensemble. Prerequisites: MUS 229,329, participation in ensemble, permission of ensemble director

MAP CI40, CI 45 **Advanced Conducting, Instrumental** (1-4, F&S)

Preparation of material for a major instrumental ensemble and actual experience directing the ensemble. Prerequisites: MUS 229, 430, participation in ensemble, and permission of ensemble director

Individual Performance Areas

Brass

MAP FH10-FH45 **French Horn**

MAP TR10-TR45 **Trumpet**

MAP EU10-EU45 **Euphonium**

MAP TN10-TN45 **Trombone**

MAP TB10-TB45 **Tuba**

Keyboard

MAP HC10-HC45 **Harpsichord**

MAP OR10-OR 45 **Organ**

MAP PI10-PI45 **Piano**

MAP PC10-PC45 **Percussion**

Voice

MAP VO10-VO45 **Voice**

Strings

MAP VL10-VL45 **Violin**

MPA VA10-VA45 **Viola**

MAP VC10-VC45 **Violoncello**

MAP BS10-BS45 **Double Bass**

MAP GU10-GU45 **Guitar**

P10-HP45 **Harp**

Woodwinds

MAP FL10-FL45 **Flute**

MAP OB10-OB45 **Oboe**

MAP CL10-CL45 **Clarinet**

MAP SX10-SX45 **Saxophone**

MAP BN10-BN45 **Bassoon**

MAP SP10-SP45 **Specialized Study**

MAP 385, 485 **Junior Recital, Senior Recital** (0, F&S)

Church Music

MCHU 301 **Church Music Administration** (2, F04, 06)

Principles and administration of church music including resources, recruitment, children's choirs, handbell choirs, and working with pastoral staff and congregation.

MCHU 416 **Introduction to Hymnology** (2, F03, 05)

An introductory history of hymnology from the early Christian church to the present. An investigation of hymnic poetic and musical styles. Stress upon familiarity with the hymnal.

MCHU 451 **Music and Worship** (3, S04)

Music and liturgical practices in the history of the Christian Church, and consideration of issues in contemporary worship practice in light of church history and Christian theology.

MCHU 476 **Service Playing, Organ** (2, OD)

Development of keyboard skills with special application to organ playing in church service: melody harmonization, bass realization, hymn playing and transposition, accompanying (solo and choral), extemporization in various styles. Permission of instructor.

MCHU 477 **Service Playing, Piano** (1, OD)

Development of keyboard skills with special application to piano playing in church service: melody harmonization and reharmonization, hymn playing and transposition, accompanying (solo and choral), extemporization in various styles. Permission of instructor. Required of piano majors and piano & organ concentrations within music education curricula.

Composition (see Applied Study above for private composition courses)

MTH 367 **Elementary Composition and Orchestration** (2, F&S)

Composition and orchestration of smaller forms up to and including the sonata. Students progress in formal and technical skill by ability. Public performance encouraged. Prerequisite: MTH 326 or permission.

Conducting (see Applied Study above for advanced conducting courses)

MUS 229 **Basic Conducting** (2, F&S)

Basic conducting, rhythmic development, baton technique, three hours per week. Prerequisite: MTH 225

MUS 329 **Choral Conducting** (2, F)

Elements of choral conducting; training of choirs; rehearsal techniques; preparation of choral scores. Three hours per week. Prerequisite: MUS 229

MUS 430 **Instrumental Conducting** (2, S)

Conducting laboratory band or orchestra; methods of presenting band and orchestral materials. One and one-half hours with laboratory band or orchestra per week. Prerequisite: MUS 229

Ensembles

For non-music majors

All college students are invited to participate in the various musical organizations. Credit is awarded non-music majors for the various available ensembles (normally one credit per semester), and an academic grade is recorded. By special permission of the conductor, a student may participate in a major ensemble without credit. Chamber ensembles are also formed according to demand, either with or without credit.

Non-music majors may satisfy the three-credit first-level integrative studies requirement in fine arts by several semesters' participation in a major ensemble. Ensembles which carry integrative studies credit include Men's Choir (MUS 144), Women's Choir (MUS 145), Chapel Choir (MUS 147), Symphonic Winds (MUS 137), Philharmonia (Orchestra) (MUS 143), and College Choir (MUS 149). Completion of the IS fine arts requirement normally requires two years' participation in a major ensemble. It is important that students desiring IS credit for ensemble participation enroll in the course numbers listed above and **not** in the 200- or 300-level numbers used by music majors and others not seeking IS credit for this experience.

Membership in major ensembles is on a yearly basis; students enrolled in the fall semester are also expected to participate in that ensemble in the spring semester. A director may occasionally grant an exception to the foregoing, or permit joining for only the second semester.

Non-music majors may participate in any music ensemble, by audition or permission of the director. However, ensembles other than the five major groups listed above (with 100-level course numbers) will count only as elective credit, and not for integrative studies credit.

For music majors

One major ensemble (MUS 244, 245, MUS 247, MUS 337, MUS 343, or MUS 349) is required of music majors during each semester of residence. The time spent in such experience is three or five hours per week per ensemble. Woodwind, brass, and percussion majors must be members of both orchestra and symphonic winds unless excused by the director of one of these ensembles with the concurrence of the associate dean for music.

Credit is allowed for membership in the second ensemble. Music education majors who elect the combined curriculum must participate in both instrumental and choral ensembles in the course of their four years. Those who elect the vocal curriculum are excused from participating in instrumental ensembles.

Major ensembles; † = course number for first-level integrative studies credit

Audition required. By permission of the director.

MUS 144 **Men's Choir** †

MUS 244 **Men's Choir**

MUS 145 **Women's Choir** †

(1/1, F&S)

MUS 245 **Women's Choir**

(0, 1, F&S)

MUS 147 **Chapel Choir**†

(1/1, F&S)

MUS 247 **Chapel Choir**

(0, 1, F&S)

MUS 137 **Symphonic Winds (Touring)** †

(1/1, F&S)

MUS 337 **Symphonic Winds (Touring)**

(*0, 1, 2 F&S)

MUS 143 **Philharmonia (Orchestra) (Touring)** †

(1/1, F&S)

MUS 343 **Philharmonia (Orchestra) (Touring)**

(*0, 1, 2 F&S)

MUS 149 **College Choir (Touring)** †

(1/1, F&S)

MUS 349 **College Choir (Touring)**

(*0, 1, 2, F&S)

**Ordinarily one credit first semester; two credits second semester if touring.*

MUS 223 **Jazz Workshop (Houghton Jazz)**

(0, 1, F&S)

Preparation and presentation of a variety of jazz repertoire, including swing, combo, and modern styles. Permission of director.

MUS 226 **Flute Ensemble**

(0, 1, F&S)

Preparation and presentation of repertoire for flute ensemble. Permission of director.

MUS 255 **Brass Ensemble**

(0, 1, F&S)

Preparation and presentation of repertoire for brass ensemble. Permission of director.

MUS 457C **Handbell Choir**

(0, 1, F&S)

Preparation and presentation of repertoire for handbells. Permission of director.

MUS 353 **Opera Workshop**

(1, S)

Preparation and presentation of operatic scenes and complete works from the standard repertoire. Some musical comedy. Study of techniques of stage movement and stagecraft. Three hours in rehearsal per week; some outside rehearsal. Permission of director.

MUS 447, 448 **Piano Ensemble**

(1/1, F&S)

Performance of keyboard ensemble repertoire, Renaissance to 20th century. Duet and multi-piano literature. Emphasis on style and special ensemble problems. Fulfills ensemble requirement for junior and senior applied piano (performance) majors. Four hours outside practice.

MUS 455 **Chamber Singers**

(1, F)

Practical experience singing in a small group of 12 to 16 performers. Three hours in rehearsal per week. Permission of director.

MUS 457 **Chamber Ensembles**

(1/1, F&S)

Ensembles organized to include interested students. Small groups rehearse three hours per week. Standard literature for handbells, percussion, strings, woodwinds, brass, percussion, guitar, etc., is studied with a view toward public performance during the year. Permission of appropriate ensemble director.

Group Instruction: Practical Keyboard

Elementary and intermediate piano, taught in six semesters of Practical Keyboard. One hour class, six hours practice weekly. Emphases: technique, repertoire, and functional skills of sight-reading, transposition, improvisation, and accompaniment. Placement level determined by audition. Piano levels 222, 225, 226, 227 must be taken by all music education non-keyboard majors except instrumental majors, regardless of repertoire level at audition.

MKBD I **Practical Keyboard I**

(1,F&S)

Basic technique, rhythm, tone conception, articulation, fingering. Pentachord patterns, sight reading, transposition. Tetrachord scales. Simple I-V harmonization. Grade 1 repertoire.

MKBD II Practical Keyboard II (1, F&S)
Basic work as in MKBD 110-111; pedaling and phrasing. Easier major scales, two rhythms, and arpeggios (hands separate). I-IV-V progressions and harmonization with simple accompaniments; IV7 by-ear chording. Grade 1 sight reading. Grade 2 repertoire.

MKBD III Practical Keyboard III (1, F&S)
Easier major scales, hands together, two rhythms; easier arpeggios and minor scales, hands separate. Major/minor primary triad patterns and harmonization, by-ear work with varied accompaniments. Grade 2 sight reading; simple improvisation; easy hymns. Grade 3 repertoire.

MKBD IV Practical Keyboard IV (1, F&S)
Major/minor scales, arpeggios, triads; hands together. Major/minor progressions, harmonization; by-ear work using secondary chords and expanded accompaniments. Grade 2-1/2 sight reading; grade 3 transposition, improvisation; hymns, songs. Repertoire such as Bach short preludes and easy sonatas.

MKBD V Practical Keyboard V (1, F&S)
All major/minor scales and arpeggios, hands together, three rhythms. Progressions, harmonization; by-ear work using secondary chords and dominants in expanded patterns. Grade 3 sight reading; four-part transposition. Repertoire: easier Bach inventions, allegro sonatina movement.

MKBD VI Practical Keyboard VI (1, F&S)
All scales and arpeggios, four rhythms. Harmonization and by-ear work with advanced chords and accompaniments. Hymns and patriotic songs in pianist styles with transposition. Choral (including open vocal score) and art song accompaniment. Grade 4 sight reading. Repertoire such as Bach inventions and easy classic sonatas.

Group Instruction: Voice Class

MCLV I Class Voice I (1, F&S)
Study of posture, breath control, tone production, and diction. Textbook used. Includes both group and individual singing of simple vocalises and songs in English. Hearing required. Six hours practice.

MCLV II Class Voice II (1, F&S)
Continued study of basic vocal techniques. Emphasis on individual singing of vocalizes and songs in English. Introduction to Italian diction. Hearing required. Six hours practice.

Music Education

MED 203 Music in Therapy (3, OD)
Introduction to music therapy as a profession and to applying music as a therapeutic method. History and present state of music therapy; music's contribution to business, industry, schools. Expected: some skill at reading music and some skill at the piano.

MED 210 Field Experiences in Music Education (2, M)
Students participate in three weeks of field experiences in high-need school districts working as teachers' assistants and meet in a weekly seminar to discuss their experiences. Designed to fulfill the New York state field experience mandate; students earn 75-90 hours of field experience credit taken during freshmen or sophomore years. Students may opt to take EDUC 240, Teaching in Urban American, in lieu of this course. (See Greatbatch School of Music Handbook for detailed explanation of Field Experience and other Certification requirements.)

MED 214 Woodwind Instruments (1, F&S)
Basic techniques of playing flute, oboe, clarinet, saxophone, and bassoon; acoustical, historical, and practical understanding of these instruments. Two hours class, two hours practice per week.

MED 215 Stringed Instruments (1, F&S)
Basic techniques of playing violin, viola, cello, and double bass; acoustical, historical, and practical understanding of these instruments. Two hours class, two hours practice per week.

MED 217 Brass Instruments (1, S)
Class instruction in various brass instruments, to acquaint music education majors with basic problems and teaching techniques of the brasses. Includes study on at least three brass instruments. Two hours class, two hours individual practice per week.

MED 218 Percussion Instruments (1, S)
Snare drum, timpani basics, bass drum, mallet instruments, cymbals, smaller instruments of the battery; prepares music education majors to teach percussion instruments in public schools. Concentration on snare drum: coordination of hands; counting and playing rhythm. Two hours class, two hours individual practice per week.

MED 227 String Techniques (2, S)
Preparation for teaching violin, viola, 'cello, and double bass through the high school level. Development of playing and demonstration abilities. Survey of methods and materials. Two hours class, three hours practice. Prerequisite: MED 215

MED 240 Percussion Techniques (1, S)
Preparation for teaching percussion instruments through high school level. Development of playing skills on timpani, mallet instruments, drums. Survey of percussion ensemble music and other materials. One class per week, three hours practice. Prerequisite: MED 218

MED 241 Brass Techniques (2, F)
Preparation for teaching brass instruments through the high school level. Development of playing and demonstration abilities. Survey of methods and materials. Two hours class, three hours practice. Prerequisite: MED 214

MED 242 Woodwind Techniques (2, S)
Preparation for teaching woodwind instruments through the high school level. Development of playing and demonstration abilities. Survey of methods and materials, two class hours, three hours of practice. Prerequisite: MED 214

MED 330 Keyboard Skills (2, F or S)
Functional piano class required of piano and organ majors and concentrations within music education curricula. Emphases: sight reading, harmonization, transposition, accompaniment, score reading, improvisation. Jury exam. Six hours weekly practice. Prerequisite: Piano level 237

MED 351 Elementary School Methods (2, F)
Preparation for teaching general music in kindergarten through sixth grades. Particular emphasis upon preparation to teach according to the New York State Learning Standards for the Arts.

MED 352 Secondary School Methods (2, S)
Preparation for directing secondary school (grades 7-12) choral ensembles, and for teaching secondary level general music and other non-performance music classes. Particular emphasis upon preparation to teach according to the New York State Learning Standards for the Arts.

MED 354 Instrumental Methods (2, S)
Instrumental music program in public schools. Organization and training of school orchestras, bands, and instrumental classes; pedagogical methods of the standard band and orchestra instruments. Particular emphasis upon preparation to teach according to the New York State Learning Standards for the Arts.

MED 405 Student Teaching in Music (12, F)
Practical experience teaching music in public schools. Two placements of approximately seven weeks each, one on the elementary level (grades K-6), and one on the secondary level (grades 7-12). Criteria for approval: Completion of required professional education coursework as per emphasis, cumulative gpa of at least 2.50, documentation of at least 100 hours of field experience, and approval by the Study Teaching Committee.

MED 419 Student Teaching Seminar (2, F)
Seminar during and following student teaching, dealing with effective teaching practices including problems of motivation, group management, curriculum development, and musical education goals.

Music History and Literature

MHS 222 Introduction to Film Music (3, OD)
History and aesthetics of music written for Hollywood films. Exploration of the sociology, philosophy, psychology, and technique of film music. Review of the elements of musical style, with particular emphasis on their relation to the dramatic aspects of film. Written work emphasizing critical analysis of the use of music in various American film genres.

MHS 231 Music History and Literature I (2, F)
Development of music from earliest times through the Renaissance. Principles of listening and style analysis. Literature and style of various schools. Listening, examination of scores, performance, research reports, lectures, discussion.

MHS 232 Music History and Literature II (2, S)
Continues MHS 231, from late Renaissance through Baroque (1750).

MHS 254 Music of World Cultures (3, OD)
Survey of Asian, Latin American, African, European music; listening experience, with research and analysis. Introduction to ethnomusicology, to broaden student's perspective. Recommended for those interested in mission field or intercultural relations.

- MHS 333 Music History and Literature III** (3, F)
Development of early classic through romantic music styles in cultural context. Principles of listening and style analysis. Introduction to basic bibliography and research. Principles of a Christian aesthetic.
- MHS 334 Music History and Literature IV** (3, S)
From late romantic through 20th century styles. Emphasis on individual research, writing, and class presentations. Evaluation of musical-cultural trends from a Christian perspective.
- MLT 113 Masterworks of Sight and Sound** (3, OD)
Introduction of art and music from classic age to present; concert and gallery attendance included. Satisfies fine arts requirement.
- MLT 211 Music and Listening: An Introduction** (3, F&S)
Introduction to the study and enjoyment of classical masterpieces in music: recordings, outside biographical readings, reports on current musical events.
- MLT 470 Organ Literature** (2, OD)
An examination of the history of the development of the organ and its literature from the middle ages to the present. Examination of style and structure and their impact on performance.
- MLT 480 Piano Literature** (2, S03)
An examination of the history of the development of the piano and its literature, including music written for early keyboard instruments which today is accepted as part of the piano repertoire. Emphasis on 18th, 19th, and 20th century repertory. Examination of style and structure and their impact on performance. Chamber music with piano, concerti, solo piano literature.
- Music Pedagogy and Specialized Courses**
- MUS 219, 220 Foreign Language Diction** (1/1, F&S)
Basic diction facility in English, Italian, German, French. Required of voice majors and concentrations (any curriculum); elective for others. Two class meetings per week.
- MUS 250 Music and Christian Perspective: An Introduction** (2, F)
Introduction to music studies in the context of Christian worldview. Examination of Biblical, philosophical, and scientific bases for human creativity. Discussion of music's role in society and in the liberal arts context. Orientation to college-level work in music, including diagnostic examination of background knowledge.
- MUS 330 Keyboard Skills** (2, F or S)
Functional piano class required of piano and organ majors and concentrations within music education curricula. Emphases: sight reading, harmonization, transposition, accompaniment, score reading, improvisation. Jury exam. Six hours weekly practice. Prerequisite: Piano level 237
- MUS 356 Voice Pedagogy** (2, S05)
Methods of voice production and development as preparation for teaching; emphases on teaching and evaluation. Attention to proper selection of music. Two class hours per week; junior and senior year.
- MUS 477 Piano Pedagogy I** (2, F03)
Preparation for teaching beginning piano students. Study of beginning piano methods and literature, including adult and preschool materials. Projects in relevant teaching methods such as Suzuki, Kindermusik, Orff, and Dalcroze. Guidelines for development and maintenance of private piano studio and to assist in the purchase and maintenance of a piano. Observation of studio and group teaching.
- MUS 478 Piano Pedagogy II** (2, S04)
Practicum for teaching community students, with presentation of a public recital for children and a masterclass for adults at end of the semester. Practical Keyboard Practicum. Study of intermediate piano methods and repertoire, a survey of professional organizations and publications for the private piano teacher, and a study of the writings and teaching ideals of great piano pedagogues. Prerequisite: Piano Pedagogy I
- MUS 470 Organ Pedagogy** (2, OD)
Examination of teaching methods, materials, and technical approaches for the organ. Guided teaching in private and class settings. Required for organ performance majors.
- MUS 191, 192; 291, 292; 391, 392; 491, 492 Independent Study** (1, 2, or 3)
- MUS 395 Special Topics** (1-3, OD)
- Music Theory**
- MTH 225 Theory I** (3, F)
Basic materials of tonal music. Correlated keyboard, musical analysis and original composition. Corequisite: MTH 227 or permission of instructor

- MTH 226 Theory II** (3, S)
Continuation of tonal musical materials. Correlated keyboard, musical analysis and original composition. Prerequisite MTH 225; Corequisite: MTH 228, or permission of instructor
- MTH 227 Aural Skills I** (1, F)
Beginning work in sight singing, ear training, and dictation. Two hours class per week, plus independent computer- and tutor-assisted instruction. Corequisite MTH 225 or permission
- MTH 228 Aural Skills II** (1, S)
Continued work in diatonic sight singing, ear training, and dictation. Two hours per week, plus independent computer- and tutorial-assisted instruction. Prerequisite: MTH 227; corequisite: MTH 226, or permission
- MTH 325 Theory III**
Analysis and composition of eighteenth-century counterpoint. Harmonic materials of the nineteenth century. Analysis of literature to Debussy. Form study and original composition. Prerequisite: MTH 226; co-requisite: MTH 327, or permission of instructor
- MTH 326 Theory IV**
Music of the 20th century. Prerequisite: MTH 325; co-requisite: MTH 328, or permission
- MTH 327 Aural Skills III** (1, F)
Chromatic sight singing, ear training and musical dictation. Two hours per week, plus independent computer- and tutor-assisted instruction. Prereq: MTH 228; Coreq: MTH 325, or permission.
- MTH 328 Aural Skills IV** (1, S)
Sight singing, ear-training and dictation using advanced chromatic and 20th century materials. Two hours per week, plus independent computer- and tutor-assisted instruction. Prerequisite: MTH 327; corequisite: MTH 326, or permission of instructor
- MTH 458 Sixteenth Century Counterpoint** (3, F03)
A study of the principles of Counterpoint in western music, with an emphasis on models from 16th century vocal polyphony. Analysis of repertoire, original compositions. Prerequisite: MTH 326 or permission
- MTH 463 Form and Analysis** (3, F04)
Structural and harmonic analysis of musical form through simple and compound song form, variation, rondo, sonata forms. Contrapuntal forms of the invention, chorale prelude, fugue, canon. Study of the analysis techniques of Schenker, La Rue, and others.
- MTH 475 Synthesizer/Computer Applications** (3, OD)
Introduction to electronic musical aesthetics, synthesis, and MIDI techniques. Hands-on composition projects utilizing computers and synthesizers. Prerequisite: MTH 367, Elementary Composition and Orchestration (see Composition heading for course description), or permission of instructor

PASTORAL & CHURCH MINISTRIES PROGRAM (AAS)

(See Adult Learning Opportunities section)

PASTORAL MINISTRY

(see Religion, Ministerial Concentration)

PHILOSOPHY (major and minor)

Department of Religion and Philosophy: Harold Kingdon, chair

Faculty: Bradley Beach, Carlton Fisher, Benjamin Lipscomb, W. Christopher Stewart

Major: (24 hours)

The major must include:

PHIL 241, 242 History of Philosophy I, II.....	8
PHIL 223 or 224 Critical Thinking or Formal Logic.....	2
400 level courses in PHIL.....	6
Additional hours in philosophy.....	8

General Information:

To philosophize is to think deeply about a variety of fundamental questions posed by human experience. Though the answers to these questions are interconnected, they can be divided into three areas of investigation: epistemology (the nature of truth and knowledge), metaphysics (the nature of reality – persons, the world, and God), and axiology or ethics (the values or ends involved in morality, politics, and aesthetics – the nature of the good). It is the task of finding answers to these sorts of questions rather than some specific set of answers to these questions that constitutes philosophy. A person's most basic philosophical commitments shape his or her overall perspective or point of reference intellectually.

In addition to improving one's understanding of the fundamental intellectual commitments at the core of a person's worldview, a philosophy major significantly enhances one's basic intellectual skills. For these reasons, a philosophy major is excellent pre-professional training. Philosophy students pursue careers in a wide range of fields, including law, education, ministry, medicine, business, public administration, and writing.

Minor: The minor consists of 12 hours of course work in philosophy, and must include at least four hours of history of philosophy (either PHIL 241 or 242).

Course Descriptions

PHIL 200 Knowledge and Reality (2, F, S)

Overview of the contours of a world and life view coupled with more detailed critical analysis of perennial and foundational issues in epistemology (the nature of truth and knowledge) and metaphysics (the nature of reality: persons, the world, and God), such as our capacity to know, perform free actions, or survive death.

PHIL 201 Ethics (2, F, S)

Critical analysis of alternative theoretical frameworks of historical significance in terms of which humans have struggled to understand the nature of goodness and the process of ethical decision making, with close attention to the nature and sources of character (personal excellence: virtue and vice) and the foundations of morality.

PHIL 202 Metaphysics, Morality, and Mind (4, F, S)

Critical analysis of the contours of a world and life view coupled with more detailed critical analysis of perennial and foundational issues in epistemology (the nature of truth and knowledge), metaphysics (the nature of reality: persons, the world, and God), and ethics (the nature of goodness and the process of ethical decision making, with close attention to character--virtue and vice--and the foundations of morality).

PHIL 210 Community, Ideology, and the Environment (3)

(See description under Off-Campus Programs-Adirondack section.)

PHIL 223 Critical Thinking (2, F, S)

Introduction to basic argument analysis and informal fallacies, with special emphasis on how to recognize, analyze, and evaluate arguments expressed in everyday, ordinary language.

PHIL 224 Formal Logic (2, F)

Introduction to deductive inference via the formal languages of modern philosophical logic. Will include truth functional propositional logic and quantified predicate calculus, with perhaps some modal logic.

PHIL 241 History of Philosophy I: Ancient and Medieval (4, F)

Survey of intellectual history from early Greek through late Medieval thought. Includes Pre-Socratics, Plato, Aristotle, Epicureans, Stoics, Augustine, Aquinas, Scotus, and Ockham. Readings include both primary and secondary sources.

PHIL 242 History of Philosophy II: Modern and Contemporary (4, S)

Survey of intellectual history from early modern through twentieth century and postmodern thought. Includes Descartes, Spinoza, Leibniz, Locke, Berkeley, Hume, and Kant, as well as major figures and movements from the 19th and 20th centuries. Readings include both primary and secondary sources.

PHIL 250 Aesthetics (2, S)

A philosophical study of art and aesthetic experience. The nature of beauty, the nature of art, the interpretation and aesthetic evaluation of art, and art in its ethical dimension are topics covered via readings drawn from historical and contemporary sources. Though the visual arts of painting and sculpture will be the focus, other art forms, such as music, dance and drama, are examined as well.

PHIL 300 Christianity and Postmodernism (3, F)

(See course description in Off-Campus Programs-Australia section.)

PHIL 315 Theory of Knowledge (4, S04)

Examination of contemporary perspectives on the nature and limits of human knowledge, as well as the concept of truth.

PHIL 326 Ethical Theory (4, F)

Analysis of traditional normative theories (formalism, consequentialism, and virtue ethics) through the reading of primary sources. Also explores developments in contemporary moral theory.

PHIL 350 Reason and Religious Belief (2, F)

Analytic approach to philosophic thought regarding some of the concepts and beliefs of Christian theism. Attention given to arguments for the existence of God, the problem of evil, and the roles of faith and reason in religious belief.

PHIL 360 History and Philosophy of Science (4, S04)

Survey of the rise of western science from its origins in antiquity to the present, addressing both the content and methods of science in each major period. Major figures considered include Aristotle, Galen, Copernicus, Kepler, Galileo, Descartes, Boyle, Newton, Lavoisier, Darwin, and Einstein. A wide range of science fields will be surveyed and specific attention is given throughout to the interrelationships between science and other disciplines, the relationship between science and culture, and the interaction of science and religion.

PHIL 412 Special Topics (2, 3, or 4, OD)

Examination of specific movements or particular problems in philosophy, or themes in the history of ideas.

PHIL 414 Major Figures (2, 3, or 4, OD)

In-depth study of the thought of one or more figures with an emphasis on critical analysis and evaluation of primary source material.

PHIL 191, -2; 291, -2; 391, -2; 491, -2 Independent Study (1, 2 or 3)

PHIL 496 Honors in Philosophy (3, S)

PHYSICAL EDUCATION (majors and minors)

Department of Physical Education/Exercise Studies & Recreation/Leisure: William R. Swanson, chair

Faculty: Deanna Hand, Dwight Hornibrook, Sandra Johnson, Thomas R. Kettelkamp, Beth Markell, Trini Rangel, William R. Swanson, Brad Zarges

Majors: Physical Education (teaching K-12: 38 hours in the major; 30 in education; 12 hours in pre/co-requisites),

Physical Education (non-teaching: 24 hours; 8 hours in pre/co-requisite)

Physical Education (physical fitness: 36 hours; 18 hours in pre/co-requisites)

Minor: Physical Education (16 hours)

Physical Education with focus on athletic training (14 hours)

Teaching Option

The physical education major leading to New York State teacher certification requires 38 hours in physical education courses and 30 in education block courses. Nine of these hours shall be earned in activity laboratories (AL).

Pre-/Co-requisites

BIOL 103 Fundamentals of Biology 4

BIOL 217, 218 Human Anatomy and Physiology 8

Total: 12

Core Requirements

PHED 212 Foundations of Physical Education 2

PHED 237 Holistic Health 3

PHED 239 Principles & Practices of Coaching 2

PHED 246 Introduction to Athletic Training..... 3

PHED 248 Adaptive Phys. Education and Fitness Program 2

PHED 276 Motor Development and Learning 3

PHED 315 Psychosocial Aspects of Phys Educ & Sports 2

PHED 320 Measurement and Eval in Phys Education..... 3

PHED 330 Physiology of Exercise 3

PHED 341 Kinesiology 3

PHED 401 Organization and Mgmt of Phys Education..... 3

Total: 29

Activities	
PHED 261, 262 Teaching Team Sports	2
PHED xxx Swimming (PHED 102, 228, or 265)	1
PHED 221 Educational Gymnastics	1
PHED 226A Movement & Rhythmic Fundamentals	3
An Outdoor Component (one credit hour) chosen from the following:	
REC 102A Initiatives	1
REC 227 Outdoor Leadership Training	3
REC 266 Outdoor Living Skills	2
REC 330 Methods/Mat'ls of Outdoor Educ	3
PHED 220 Adventure Sports	3
<u>And</u> PHED 251 or 252 Teaching Lifetime Sports	1 or
PHED 220 Adventure Sports	3
Total:	9
Education Requirements	
EDUC 217 History and Philosophy of Education	3
(or EDUC 218 History and Philosophy of Secondary Education...3)	
EDUC 240 Teaching in Urban America	3
EDUC 313 Language & Literacy in the Content Area	3
(or EDUC 328 Foundations of Language and Literacy...3)	
PHED 225 Teaching Elementary Physical Education	3
PHED 302 Teaching Secondary Physical Education	3
EDUC 226 Multimedia Technologies	1
PHED 411 Issues Seminar In Physical Education	2
PHED 405 and 407 Student Teaching.....	12
Total:.....	30

Physical Education Non-teaching Option

The physical education non-teaching major requires 24 hours in physical education courses. Six of these hours shall be earned in activity laboratories.

Pre-/Co-requisites	
BIOL 103 Fundamentals of Biology	4
BIOL 217 Human Anatomy & Physiology	4
Total:	8
Major Requirements	
PHED 212 Foundations of Physical Education	2
PHED 226 Teaching Elementary Physical Education	3
PHED 237 Holistic Health	3
PHED 302 Teaching Secondary Physical Education.....	3
(Plus 7 hours from any of the courses listed under	7
"core requirements" for the physical education teaching option)	
Total:	18
Activities	6
Six hours are required from any of the courses listed under "activities" for the physical education teaching option.	

Minor: The physical education minor (16 hours) requires Lifetime Wellness (PHED 101) and Physical Education (PHED 102) as prerequisites to all other courses, plus Holistic Health (PHED 237), Foundations of Physical Education (PHED 212), and 11 additional hours from courses numbered above 200. Not less than two of these 11, or more than five, may be in activity laboratories. Fundamentals of Biology (BIOL 103) is highly recommended.

Minor: The physical education minor with a focus in athletic training (14 hours) is comprised of the courses listed below. This minor is designed to enhance the student's skills in preventing, evaluating, and treating various athletic injuries.

Required classes	
PHED 246 Introduction to Athletic Training.....	3
and	
PHED 243 Lower Extremity Pathology and Evaluation	3
or PHED 343 Upper Extremity Pathology and Evaluation	3
(strongly recommended to take both, but not required)	
6 hours from the following courses:	
PHED 348 Therapeutic Exercise Mgmt. of Injuries.....	3
PHED 330 Physiology of Exercise or	
PHED 341 Kinesiology	3
Choose 2 hours of electives from any Physical Education theory	
course 211 or above	2
Total:	16

Physical Fitness

The physical fitness option is a non-teaching option requiring 35 credits in physical education plus two hours in Outdoor Living Skills. One of the credits shall be earned in activity laboratories (AL). Also included is a three- to 12-credit internship.

Pre-/Co-requisites

BIOL 103 Fundamentals of Biology	4
BIOL 217, 218 Human Anatomy and Physiology	8
CHEM 207 Introduction to Nutrition	3
PSY 111 Introduction to Psychology	3
Total:	18

Core Requirements

PHED 212 Foundations of Physical Education	2
PHED 225 Teaching Elementary P.E.....	3
At least 2 hours from	2
PHED 226 Movement and Rhythmic Fundamentals.....	3
PHED 251 Teaching Lifetime Sports I.....	1
PHED 252 Teaching Lifetime Sports II.....	1
PHED 302 Teaching Secondary Physical Education.....	3
PHED 237 Holistic Health	3
PHED 246 Introduction to Athletic Training.....	3
PHED 248 Adaptive P.E. and Fitness Programs	2
PHED 276 Motor Development and Learning	3
PHED 320 Measurement and Evaluation in Phys. Ed.....	3
PHED 330 Physiology of Exercise	3
PHED 341 Kinesiology	3
PHED 350 Health and Physical Fitness for Senior Adults.....	2
PHED 401 Organization & Mgmt of Phys Ed & Athletics	3
PHED xxx Swimming (PHED 102 or 228 or 265)	1
REC 266 Outdoor Living Skills	2
Total:	36-37
PHED 420 Internship.....	4-12
or PHED 423	1
PHED 424	1
PHED 426	2
Competencies in CPR and first aid	

Coaching Registration

Completion of the teaching certification option meets all requirements for New York registration for coaching interscholastic sports in the public schools. Students in other majors/minors interested in coaching registration should take:

PHED 239 Principles and Practices of Coaching.....	2
PHED 246 Introduction to Athletic Training.....	3
PHED 276 Motor Development and Learning	3
PHED 330 Physiology of Exercise	3
PHED 341 Kinesiology	3
Activity lab:	
PHED xxx Teaching Team Sports or	
Teaching Lifetime Sports	1
Total:	15

Course Descriptions

PHED 101 Lifetime Wellness (integrative studies) (1, F&S)
Health-related physical fitness, self-evaluation, and individualized exercise programs.

PHED 102 Physical Education (integrative studies) (1, or .5 for non-PE majors F&S)
Physical coordination and conditioning; basic skills; appreciation for physical activity and lifetime fitness in Christian life. Note: several REC courses may be used in lieu of this for integrative studies credit.

PHED 103, 104 Adaptive Physical Education (integrative studies) (1/1, F&S)
For those who have some physical handicap or are limited by lack of coordination and basic training. Prerequisite: PHED 101 or 101M. Course objectives same as PHED 102. Remedial work included. Two hours applied.

PHED 105, 106 Physical Education (1/1, F&S)
Designed for students repeating PHED 102 in a section offering activities not included under credit previously received.

PHED 212 Foundations of Physical Education (2, S)
Basic philosophical principles, history, scientific foundation, and contemporary significance of physical education; educational aims and objectives; physical education in the modern school curriculum.

- PHED 220 Adventure Sports (Activity Lab)** (3, M)
 Experiential learning of a variety of adventure sports (backpacking, climbing, mountain biking, kayaking/rafting) in canyons and of the Adirondack or Rocky Mountain regions; teaching experience and leadership development, fitness training for lifetime benefits; personal and spiritual growth; environmental stewardship; principles of aerobic conditioning; developing training programs. (Meets PHED 102 requirement.)
- PHED 221 Educational Gymnastics I (Activity Lab)** (1, F04)
 Introduction to teaching gymnastics in a K-12 curriculum; floor exercise, tumbling, basic skills for limited apparatus; routine development; movement education concepts; teaching methods; safety and spotting. Three hours of field experience required.
- PHED 222 Traditional Gymnastics II (Activity Lab)** (1, S05)
 Olympic style progressions for floor exercise and all apparatus, enhance performance base established in Educational Gymnastics; develop confidence and proficiency with techniques; professional involvement. Permission from instructor.
- PHED 225 Teaching Elementary Physical Education** (3, F)
 Student development and learning styles, teaching methods, analysis of one's own teaching, classroom management, evaluation of students' performance, and preparation of curriculum, unit, and lesson plans for the elementary level. Fifteen hours of field experience required.
- PHED 226 Movement and Rhythmic Fundamentals** (3, S)
 A conceptual approach to human movement; techniques for dealing with force, time and space, and flow as they relate to movement; stunts and gymnastics; the use of leap-up experiences, skills, and rhythms in games and teaching methods. Three hours lecture and applied.
- PHED 227 Adventure Program Methods (Activity Lab)** (1, May)
 Skills and methods of teaching initiatives, ropes course, and adventure activities in physical education and outdoor education programs in school systems. Two hours applied.
- PHED 228 Lifeguarding (Activity Lab)** (1, S)
 Preventive lifeguarding, basic skills, emergency plans, search and recovery techniques, legal responsibilities, pool operations, and record keeping. Prerequisites: 15 years of age or older, 500 yds continuous swim, strong swimming skills.
- PHED 237 Holistic Health** (3, F)
 Lifetime health and well-being, interpersonal relationships, and current issues. Topics include stress, human sexuality, mental health, substance use and abuse, death and dying, personal safety, and fitness and nutrition. (May be used to meet PHED 101.)
- PHED 239 Principles and Practices of Coaching** (2, S)
 Principles and techniques of coaching, systems used in coaching, and the development of a coaching system. An in-depth study of the athlete, the coach, and the team as a group.
- PHED 242 Techniques of Taping and Bracing** (1, F)
 Practical learning of techniques and philosophies of taping, wrapping, padding and bracing for prevention, management, and treatment of athletic injuries of the extremities and trunk.
- PHED 243 Lower Extremity Pathology and Rehabilitation** (3, S)
 Pathology and evaluation of injuries/conditions of the lower extremity and pelvis. History; observation; palpation; active and passive range of motion; muscle, neurological, and functional testing; postural assessment.
- PHED 244 Instructor's Course in Red Cross Water Safety** (2, S)
 Review and refinement of swimming strokes, diving form, and water safety skills to a level adequate to obtain swimming instruction certification. Exploration of methods of instruction for swimmers of all ages and abilities. Prepare lesson plans and teach community swim lessons. Prerequisite: lifeguarding certification or swimming level strong enough to pass lifeguarding (lifeguarding certification may be obtained during the semester if necessary). (Meets PHED 102)
- PHED 246 Introduction to Athletic Training** (3, F)
 Orientation to the sports medicine team, the NATA, and Houghton Athletic Training Program. Professional roles, responsibilities, and code of ethics, documentation, legal issues and concerns. Prevention, treatment, and management of common injuries, illnesses and disorders of the head, trunk and extremities. Basic anatomy, taping and wrapping techniques. American Red Cross CPR and first aid course included.
- PHED 248 Adaptive PE and Fitness (Activity Lab)** (2, S05)
 Physical and psychological aspects of illness and disabilities within context of physical activity. Evaluation of the individual and prescription of appropriate activity. Survey of legal aspects. Ten hours of

field experience required. Prerequisites: BIOL 103 and 218; PHED 212

PHED 251 Teaching Lifetime Sports I (Activity Lab) (1, F04)
Basic understanding of skills and teaching methods for selected lifetime sports including golf, racquetball and tennis. Students will examine preparatory activities, drills, mechanical analysis of skills, and unit and lesson planning; principles of aerobic conditioning; developing training programs.

PHED 252 Teaching Lifetime Sports II (Activity Lab) (1, S05)
Basic understanding of skills and teaching methods for selected lifetime sports including downhill and cross-country skiing, canoeing. Students will examine preparatory activities, drills, mechanical analysis of skills, and unit and lesson planning; principles of aerobic conditioning; developing training programs.

PHED 261 Teaching Team Sports I (Activity Lab) (1, F03)
Basic understanding of skills and teaching methods for selected team sports including soccer, volleyball and flag football. Students will examine preparatory activities, drills, mechanical analysis of skills, and unit and lesson planning. Two hours of field experience required.

PHED 262 Teaching Team Sports II (Activity Lab) (1, S04)
Understanding of skills and teaching methods for selected team sports including basketball, softball and team handball. Students will examine preparatory activities, drills, mechanical analysis of skills, and unit and lesson planning. Two hours of field experience required.

PHED 265 Lifeguard Instructor (Activity Lab) (1, S)
American Red Cross lifeguarding course taught by ARC certified instructor. Successful completion certifies individual to teach ARC lifeguarding classes. Two hours applied. Must be 17 years old with current lifeguard training and CPR certification. Prereq: PHED 228 or equivalent

PHED 276 Motor Development and Learning (3,F)
Introductory study of nature, scope, process of human movement. Emphases: motor development, motor patterns, movement exploration; relationships of genetics and the environment to the learning process and overall well being.

PHED 281 Pre-Physical Therapy Field Experience I (2,F)
Mastery of competencies in injury prevention, recognition, and assessment, and taping and bracing techniques, understanding of the lower extremity and medical documentation. *Requires 20 hours of observation in each of three settings: orthopedics, pediatrics, and geriatrics, with an additional 40 hours assisting with rehabilitation in the Houghton College training room. (Hours logged prior to taking this class may count with instructor's pre-approval.) Pre-PT majors only. Pre-/Co-Req: PHED 247.*
NOTE: Fall 2003 is the last time PHED 281 will be offered every year—it will be offered every "odd" year following.

PHED 290 Contemporary Issues in Sport (3, May)
Sport as a social institution and microcosm of society. Topics: socialization into and via sport; social stratifications; sport and gender, race, economics, politics, religion, social change, education.

PHED 302 Teaching Secondary Physical Education (3, F)
Student development and learning styles, teaching methods, analysis of one's own teaching, classroom management, evaluation of students' performance, and preparation of curriculum, unit and lesson plans for the secondary level. Fifteen hours of field experience required.

PHED 315 Psychosocial Aspects of Physical Education and Sport (2, S04)
Behavioral and cognitive development, learning theories, and the effects of motivation and cultural/societal factors on performance in physical education and athletics.

PHED 320 Measurement and Evaluation in Physical Education (3, F03)
Modern theories and practices in evaluation of knowledge, attitudes, and skills. Construction of both written and practical tests to measure the various aspects included in physical education. Use of descriptive and inferential statistics.

PHED 330 Physiology of Exercise (3, S)
The analysis of the physiological changes that occur in the body: during exercise, after exercise, and during a training period. Prerequisites: BIOL 103 and BIOL 217, 218.

PHED 341 Kinesiology (3, F)
The analysis of the musculoskeletal system and its interrelationship with human movement. Prerequisites: BIOL 103 and BIOL 217, 218.

PHED 343 Upper Extremity Pathology and Rehabilitation (3,F)
Pathology and evaluation of injuries/conditions of the upper extremity and thorax. History; observation; palpation; active and passive range of motion; muscle, neurological, and functional testing; postural assessment.

- PHED 348 Therapeutic Exercise Management of Injuries** (3, S05)
Mechanisms, signs, symptoms, immediate and long-term rehabilitation procedures for injuries affecting extremities and axial skeleton. Rehabilitation procedures focus on range of motion activities, joint mobilization, open vs. closed kinetic chain activities, therapeutic exercises and equipment.
- PHED 350 Health and Physical Fitness for Senior Adults** (2, S04)
Holistic health and wellness of adults 55 years and older. Emphases: physical fitness, program planning, development, evaluation; principles and practices of leadership.
- PHED 381 Pre-Physical Therapy Field Experience II** (2, S)
Mastery of competencies in injury prevention, recognition, and assessment, and taping and bracing techniques, understanding of the back, upper extremity and developing rehabilitation programs. *Requires 15 hours of observation in each of four settings: orthopedics, cardiac, respiratory, and neural rehabilitation with an additional 40 hours assisting with rehabilitation in the Houghton College training room. (Hours logged prior to taking this class may count with instructor's pre-approval.) Pre-PT majors only. Pre-/Co-Requisite: PHED 347 or 348.*
NOTE: Spring 2004 is the last time PHED 381 will be offered every year - it will be offered every "even" year following.
- PHED 401 Org. & Mgmt. of Physical Education and Athletics** (3, S)
Theories, philosophy, and systems of management; program development, finance, purchasing and care of equipment, public relations, facility and personnel management, and legal liability.
- PHED 405 Student Teaching in Physical Education N-6** (6, F&S)
- PHED 407 Student Teaching in Physical Education 7-12** (6, F&S)
Observation and teaching in elementary and secondary programs. Off-campus assignment under the direction of skilled teachers. Senior year. Student must register for PHED 411 concurrently. **Note: see Educ. Dept. policy on "Employment and Activities While Student Teaching." Student must have overall GPA of 2.5.**
- PHED 411 Issues Seminar in Physical Education** (2 F&S)
Critical analysis and synthesis of student teaching experience and of crucial issues in education.
- PHED 420 Internship: Physical Fitness** (1-12, F&S)
Observation and practical experience in a public or private agency. Off-campus assignment under the direction of skilled professionals. NOTE: Students choosing this option must complete a total of four hours in PHED 420, or a total of four hours from PHED 423, 424, and 426. The four hours in PHED 420 includes one hour of topics in current issues. Overall GPA of 2.5 required.
- PHED 423 Physical Fitness Practicum I** (1, F&S)
Directed observation in off-campus fitness center programs with hands-on practical experience. Requires at least 50 observation hours from two or more agencies, sites to be negotiated. Overall GPA of 2.5 required.
- PHED 424 Physical Fitness Practicum II** (1, F&S)
Directed observation in off-campus rehabilitation programs with hands-on practical experience. Requires at least 50 observation hours from two or more agencies; sites to be negotiated. Overall GPA of 2.5 required.
- PHED 426 Issues Seminar/Fitness Testing and Prescription** (2, F&S)
Critical analysis and synthesis of critical issues in the area of health and physical fitness. On-campus fitness testing; prescriptions and follow-ups will be conducted by the student. Prerequisites: PHED 423 and 424.
- PHED 191, -2; 291, -2; 391, -2; 491, -2 Independent Study** (1, 2, or 3)
- PHED 295, 395, 495 Special Topics** (1,2, or 3)
Depending on interest, demand and faculty availability and expertise courses will be offered to allow students to consider issues and aspects of physical education not covered in other courses.
- PHED 496 Honors in Physical Education** (3, OD)

PHYSICS BA, BS (majors and minor)

Department of Physics and Earth Science: Mark E. Yuly, chair
Faculty: Ronald Rohe, Mark Yuly

Physics Major (BS): (31 hours in major; 16 in prerequisites; 10 in co-requisites)

General Information

The BS physics major provides a broad variety of experiences with the theoretical basis of physics, its applications, experimental and mathematical techniques, and its study using computer programming and simulations. It serves as an excellent preparation for graduate work in physics or related fields, such as engineering, astrophysics, biophysics, physical oceanography, geophysics, and meteorology. Students may also use the physics major as preparation for attending professional school in fields such as medicine, dentistry, and law.

The requirements for the BS in physics are as follows:

Prerequisites (16):

PHYS 151, 152 General Physics I, II	8
MATH 181, 182 Calculus I, II	8

Required (31) which must include:

PHYS 275, 276 Experimental Physics Lab	2
PHYS 251 Mechanics I	3
PHYS 352 Mechanics II	3
PHYS 212 Modern Physics	3
PHYS 353 Electricity and Magnetism I	3
PHYS 354 Electricity and Magnetism II	3
PHYS 355 Thermal Physics	3
PHYS 356 Quantum Mechanics	3
PHYS 471,472 Physics Project Lab	2
PHYS 482 Physics Seminar	1

An additional 5 hours in PHYS courses above 200 level

Co-requisites (10):

MATH 241 Differential Equations	3
MATH 321 Multivariate Calculus	3
CHEM 151 General Chemistry I +Lab	4

Additional recommended supporting courses include:

MATH 261 Linear Algebra	3
CHEM 152 General Chemistry II + Lab	4
CSCI 211 Programming I	3
CSCI 221 Data Structures	3
PHIL 360 History and Philosophy of Science	4

Computational Physics Major (BS): (31 hours in major; 16 in prerequisites; 10 in co-requisites)

General Information

Traditionally, the study of physics has been divided into two areas: *experimental physics*, which deals with the design of experiments and measurement, and *theoretical physics*, which deals with theoretical models and predictions. More recently a third area has gained importance, *computational physics*, which involves the use of computers in modeling and analyzing complex systems. This major is available to those students interested in studying physics with an emphasis on the use of computers. It provides students with highly sought-after computer and problem solving skills in a growing area of interdisciplinary study. (See **Computational Physics**)

Applied Physics Major - Engineering Emphasis (BS) (31 hours in major; 17 in prerequisites, 13 in co-requisites)

General Information

This major is for students interested in the engineering applications of physics and is preparation for an engineering-related career or graduate school in engineering or physics. (See **Engineering**)

Physics Major (BA): (24 hours in major; 16 in prerequisites; 6 in co-requisites)

The BA major is particularly appropriate for students interested in a double major with another field, or for students completing a concentration in secondary education.

The requirements for the BA in physics are as follows:

Prerequisites (16):

PHYS 151, 152 General Physics I, II	8
MATH 181, 182 Calculus I, II	8

Required (24) which must include:

PHYS 275, 276 Experimental Physics Lab	2
PHYS 251 Mechanics I	3
PHYS 212 Modern Physics	3

PHYS 353 Electricity and Magnetism I	3
PHYS 355 Thermal Physics	3
An additional 10 hours in PHYS courses above 200 level	
Co-requisites (6):	
MATH 241 Differential Equations	3
MATH 321 Multivariate Calculus	3
Additional recommended supporting courses include:	
CHEM 151, 152 General Chemistry	4
CSCI 211 Programming I	3
PHIL 360 History and Philosophy of Science	4

Course Descriptions

PHYS 140 **Physics of Music**

(2, May, 04)

This course will focus on the physics of various phenomena associated with music. A quantitative, mathematical approach will be used and students will apply the methods of science to gain a greater understanding of music. Topics will include harmonics, frequency and tone, overtones, spectral analysis and the physics of scales.

PHYS 151, 152 **General Physics**

(4/4, F/S)

An introduction to the study of physics focusing on central concepts and problem solving. Topics include mechanics, energy and waves (PHYS 151) and thermodynamics, electricity, magnetism, optics and modern physics (PHYS 152). Three lecture and three laboratory hours each week. Prerequisite: MATH 181 (or evidence of adequate math preparation) for PHYS 151, and PHYS 151 for PHYS 152

PHYS 170 **Introduction to Engineering**

(1, F03)

An introduction to the theory and practice of engineering. By participating in a design project, students will be introduced to topics such as technical drawing using CAD software, MATLAB, and machine shop skills. The course will also address the branches of engineering, requirements of the engineering professions, and moral and ethical dimensions of engineering as a field of study and as a profession. This course is required for dual-degree engineering students.

PHYS 212 **Modern Physics**

(3, F04)

An introduction to the basic ideas of relativity and quantum theory. The implications of Special Relativity will be explored using the Lorentz transformation. General Relativity will be conceptually introduced. Elementary quantum mechanics using the Schrödinger equation will be applied to atoms, molecules, solids, nuclei, and elementary particles. Prerequisite: PHYS 152

PHYS 215 **Engineering Mechanics: Statics**

(3, S04)

A study of basic mechanics as it relates to the static stability of structures and other objects using methods of multidimensional vector analysis and virtual work. Topics to be covered include the equilibrium of a particle and a rigid body, structural analysis, friction, center of gravity, and moment of inertia. Prerequisite: PHYS 152

PHYS 250 **Engineering Mechanics: Dynamics**

(3, F04)

Methods of vector calculus are applied to investigate the multidimensional kinematics and dynamics of particles and rigid bodies. Both translating and rotating systems are explored using such principles as force, torque, work, energy, impulse, and momentum (linear and angular). PHYS 152 and MATH 182. MATH 241 are recommended pre/corequisites.

PHYS 251 **Mechanics I**

(3, F04)

A development of classical mechanics beyond the introductory physics level. The course will focus on the dynamics of particles and rigid bodies in one, two, and three dimensions. Topics covered will include central forces, collisions, and non-inertial frames of reference. Analytical and numerical methods of solution will be included. Prerequisites: PHYS 152 and MATH 182; pre/corequisite: MATH 241

PHYS 258 **Analog Electronics**

(4, S04)

A study of analog circuits comprised of resistors, capacitors, inductors, op-amps and DC and AC voltage and current sources. Methods of analyses include Kirchoff's Laws, node/mesh, network theorems, bode plots, Laplace transforms, and two-port networks. Some software tools will also be explored. Includes a three-hour weekly laboratory. Prerequisite: PHYS 152; pre/coreq: MATH 241

PHYS 259 **Digital Electronics**

(4, S05)

An introduction to digital circuits including Boolean algebra, logic gates, Karnaugh maps, decoders, flip-flops, registers, microcomputers, and interface devices. Characteristics and operation of digital integrated circuits will be covered. Some software tools will also be explored. Includes a three-hour weekly laboratory. This course is required for dual-degree engineering and engineering physics students. Prerequisite: PHYS 152

PHYS 260 **Optics**

(3, OD)

An introduction to the study of light. The course includes topics from geometrical optics, such as optical

system analysis and aberration theory, and topics from physical optics, including interference, diffraction, and Fourier optics. Special topics from quantum optics will also be included. Prerequisites: PHYS 152 and MATH 182. MATH 241 is a recommended pre/co-requisite. Two lecture and three laboratory hours each week.

PHYS 275, 276 Experimental Physics Laboratory (1,1 F04&S05)
Selected experiments in mechanics, electricity and magnetism, and modern physics.

PHYS 352 Mechanics II (3, S05)
Newton's Laws and conservation laws will be reviewed, followed by an examination of Hamilton's Principle and the Lagrangian formulation of mechanics. Using these tools, topics such as central force motion, dynamics of systems of particles and rigid bodies, and coupled oscillations and normal modes will be explored. Prerequisite: PHYS 250 or 251. MATH 261 recommended pre/co-requisite.

PHYS 353 Electricity and Magnetism I (3, F03)
An introduction, with applications, to the classical theory of electric and magnetic fields. The course will begin with an overview of vector calculus for electromagnetic theory and will develop Maxwell's equations. Pre/corequisite: MATH 321

PHYS 354 Electricity and Magnetism II (3, S04)
An examination of the important role of special relativity in electromagnetic phenomena. Maxwell's equations are introduced in a relativistic manner, and used to investigate the properties of electromagnetic waves. Also included are mathematical techniques for solving the equations of Laplace and Poisson in electrostatics. Prerequisite: PHYS 353

PHYS 355 Thermal Physics (3, S04)
Analysis of laws of thermodynamic equilibria in solid, liquid, and gaseous phases; introduction to statistical mechanics in terms of the microcanonical, canonical and grand canonical ensembles. Prerequisite: PHYS 152; pre/corequisite: MATH 241

PHYS 356 Quantum Mechanics (3, S05)
Modern quantum mechanics with an emphasis on matrix methods. Topics to be covered include time evolution of wave functions, harmonic oscillators, angular momentum, central potentials, the hydrogen atom and perturbation theory. Prerequisites: PHYS 212, MATH 241

PHYS 471, 472 Physics Project Laboratory (1/1, F/S)
Participation with a faculty member in an individual research project. May be repeated for credit.

PHYS 482 Physics Seminar (1, S)
Written and oral presentation of work completed in PHYS 471/472 (for Physics BS) or on a topic of current interest in current physics journals (for Physics BA).

PHYS 295, 395, 495 Special Topics in Physics (1, 2, 3 or 4)
Introduction to areas of physics not treated in other courses.

PHYS 391, 392, 491, 492 Independent Study (1, 2, or 3)

PHYS 496 Honors in Physics (3, OD)

POLITICAL SCIENCE (major and minor)

Department of History and Political Science: A. Cameron Airhart, chair
Faculty: B. David Benedict, Peter Meilaender, Ronald Oakerson

Major: (30 hours)

Minor: (12 hours of POLS courses above the 210 level)

Political Science Major: The political science discipline concentrates on government institutions and processes at the local, national, and international levels that result in legislation, policies, norms, and actions. In addition to supporting responsible citizenship, the major is important to students contemplating careers in teaching, government, law, diplomacy, international service, business, and journalism.

The major consists of 27 hours.

18 hours of core requirements above POLS 101:

POLS222 The American Political System	3
POLS230 Introduction to International Relations	3
POLS 309 Statistics	3
POLS312 Social Science Research Methods	3

POLS364 Political Thought.....	3
POLS480 Senior Politics Seminar	3
Political science electives above the 210 level.....	12

(Majors may fulfill up to six of these 12 hours by participating in an internship in local, state, or national domestic politics or in an international intercultural setting.)

Students will be encouraged to complete a broad liberal arts education, especially including exposure to the other social sciences (economics, sociology, psychology, and cultural anthropology) as well as history, philosophy, ethics, logic, and critical thinking.

Course Descriptions

POLS 101 Introduction to Politics (3, F)
 Considers nature, goals, and processes of politics in theory and practice; surveys major forms of government; explores key issues of world politics. Satisfies the integrative studies level I requirement in social science.

POLS 220 World Regional Geography (3, May)
 Study of location and character of major world regions and nation-states. The concept of the *region* in geography is examined, followed by detailed analysis of nine regions, focusing on political and economic issues and cultural diversity.

POLS 222 The American Political System (3, S)
 The foundation course in American politics. Focus is on the basic design of the American political system, including constitutionalism, federalism, and the separation of powers. Includes discussion of political parties, elections, Congress and the President, bureaucracy, and the judiciary.

POLS 224 States, Cities, and Communities: Grassroots Politics (3, TBA)
 A view of American politics from the "bottom-up," focusing on state and local governments, with special attention to New York. Considers urban, suburban, and rural patterns of governance in the framework of American federalism. Includes a focus on judicial process as practiced in state and local courts.

POLS 230 Introduction to International Relations (3, F)
 Development of the international system of nation-states; effects of system structure and intrastate elements on international relations; concepts such as power, balance of power, sovereignty, interdependence, and issues such as foreign policy decision making, causes of war, and nuclear arms control.

POLS 240 Comparative Government (3, F04)
 Comparative basis for understanding similarities and differences in political systems around the world, focusing on Europe and Asia. Typical issues: historical development, ideology, political parties, interest groups, government, and domestic and foreign policies.

POLS 295 Special Topics (3, F)
 (See course description in Off-Campus Programs - Houghton in Adirondack Park.)

POLS 309 Statistics (3, F&S)
 Study of descriptive as well as inferential statistics, including analysis of variance and measures of correlation; application to political, social, and psychological data. Recommended for sophomore year. Prerequisite for POLS 312 Social Science Research Methods.

POLS 312 Social Science Research Methods (3, S)
 Basic scientific method, application to social phenomena; procedures and methodological problems in various types of social research; methods of data analysis. Recommended for junior year after completion of POLS 309.

POLS 316 American Foreign Policy (3, TBA)
 Formulation and execution of US foreign policy, especially since World War II. Special attention to foreign policy strategies in light of different conceptions of vital interests, threats to these interests, and appropriate responses.

POLS 320 Community Organization and Development (3, F)
 A comparative study of how local communities organize themselves to manage natural resources and provide collective goods and sources. Considers issues related to decentralization and sustainable development. Emphasis on analytic approaches to problem-solving.

POLS 321 Public Organization (3, OD)
 Focuses on public administration and delivery of public goods and services at all levels of government. Discussion includes bureaucracy, management, intergovernmental relations, citizen participation, and service delivery. Explores issues of responsiveness, accountability, effectiveness, efficiency, and equity.

POLS 323 Public Policy Analysis (3, TBA)

Examines specific policy problems and the methods used to analyze such problems. Focus is on American domestic policies. Specific issues vary, ranging from national to local and from urban to rural.

POLS 326 American Democracy I: Representation (3, F04)

Explores patterns and issues of representation in American democracy. Examines voting, elections, political parties, interest groups, and reform movements. Prerequisite: POLS 222

POLS 327 American Democracy II: Governance (3, S05)

Explores institutions and processes of governance, focusing on Congress and the President, in the context of a federal system. Considers perennial issues, such as the separation of powers, budgetary process, and the rule of law. Prerequisite: POLS 222

POLS 336 Governance and Politics in Developing Countries (3, TBA)

A study of patterns of governance and politics typical of developing countries with an emphasis in relationships between governance and development.

POLS 355 East Asia: History and Politics (3, TBA)

Introduction to history and politics of East Asia from ancient time to the present, with focus on China and Japan. Emphasis on historical and political developments in 19th and 20th centuries leading to founding of Communist China and the new Japan.

POLS 357 Russia and the USSR: History and Politics (3, TBA)

Introduction to Russian and Soviet history and politics from first records to present, with focus on government, institutions, culture, and society of Imperial and Soviet periods.

POLS 364 Survey of Political Thought (3, F)

Introduction to Western political thought and ideas in political dialogue from the Greeks to recent critical theories. Provides foundation for understanding political action in society. Considers issues of order, equality, justice, freedom.

POLS 393 Field Experience (Internship) (1-3, OD)

Supervised participation in executive, legislative, judicial, or legal offices in local, state, or federal government when deemed suitable for academic credit and approved by the political science advisor and the chair of the Department of History and Political Science. Usually three hours of credit may be counted toward the major or minor. May be combined with an additional three hours of credit for POLS 391 Independent Study.

POLS 295, 395, 495 Special Topics in Political Science (3, OD)

According to demand and interest, courses will be offered on the Middle East, International Law and Organization, International Relations Theory, Political Economy, and Issues of War and Peace.

POLS 427 American Constitutional Law (3, S04)

Development of the Constitution through practice and leading court decisions from 1787 to the present. Emphasis on case studies.

POLS 480 Senior Politics Seminar (3, F)

Capstone course of the major in which students integrate concepts, knowledge, skills, methods, approaches, and practical experience in politics and government. Will improve research, writing, analytical, and communications skills by researching, writing, and defending a first-year-graduate-school-quality paper based on original research in both primary and secondary sources.

POLS 191, -2; 292, -2; 391, -2; 491, -2 Independent Study (1, 2, or 3, OD)

POLS 496 Honors in Political Science (3, S)

PRE-HEALTH PROFESSIONS

Faculty Advisors: Timothy Leonard, Davis McQuirt

Dental, medical, optometry, osteopathy, physician's assistant, and podiatry: Students who desire to attend one of these schools after graduation from Houghton usually major in biology or chemistry, although schools do admit students with majors other than these. Regardless, a balanced selection of courses in several disciplines is strongly encouraged as well as those required by the professional school and by the choice of major and minor.

While at Houghton the student has a curriculum advisor from the major area. Dr. Timothy Leonard, chair of the Health Professions Advisory Committee, can supply more information about any of these programs. Biennially, a practicum is offered during Mayterm for further experience in these areas to help provide guidance and confirmation of career.

Most of these schools receive far more applications than the limited number of openings so that strong natural ability and outstanding scholastic achievement on the undergraduate level are vital if

an applicant is to receive serious consideration. Each area publishes an annual book that gives details on requirements of specific schools.

Pre-veterinary medicine: Houghton provides a broad, pre-professional education, while offering those courses specified by veterinary medical colleges for admission. Veterinary colleges stress the desirability of a well-rounded post-secondary education. They accept students without regard to their pre-professional major and sometimes after three years or 90 hours of credit. However, most applicants major in biology or chemistry and, on the average, have more than 100 hours of pre-professional training. Because there are relatively few veterinary colleges, the number of students accepted each year into veterinary curricula is small. Therefore, excellence of academic achievement and personal character, as well as familiarity with the profession, are necessary for admission. Contact Professor Davis McGuirt, pre-veterinary advisor, for further information.

PRE-LAW

Faculty Advisors: Christopher Stewart, Stephen Alderman, Peter Meilaender

Students who plan to attend law school after graduation from Houghton may choose majors and minors from a wide selection of academic offerings. No particular majors or minors are required. The program for pre-law students is flexible and emphasizes the development of critical analytical thinking, habits of thoroughness, intellectual curiosity, and scholarship, and the ability to organize data and communicate the results. Therefore, a balanced selection of courses in several disciplines is advised, including: critical thinking, logic and ethics; communication, public speaking, and argumentation and debate; algebra, topology, and accounting; research and writing; as well as philosophy, history, politics, and other social sciences. While some law courses are offered (constitutional, business, and international law), they do not constitute the program's core. In all of these areas, Houghton's pre-law program directly reflects law school admissions expectations and requirements.

While at Houghton, each student has a curriculum advisor from the major area. In addition, each student works with one of the pre-law advisors to develop an individualized program. Internships for juniors and seniors in local law offices are available and encouraged. Moreover, students also should consider the senior-in-absentia program described elsewhere in this catalog. (See Index for page.)

Most law schools receive far more applications than they have openings. Strong natural ability combined with outstanding academic achievement and high scoring on the Law School Aptitude Test (LSAT) is imperative if an application is to receive serious consideration.

PRE-PHYSICAL THERAPY (biology BA major)

Department of Biology: James M. Wolfe, chair

Faculty: Sandra Johnson, Davis McGuirt

A pre-physical therapy track is available for students who are interested in pursuing graduate studies in physical therapy. A number of courses in Physical Education/Athletic Training are required for this track.

Pre-Physical Therapy Emphasis (Biology BA) (26 hours in major, 8 in prerequisites, 20 in co-requisites)

Following eight hours of General Biology (prerequisite), the Pre-Physical Therapy program consists of 26 hours in biology and physical education that must include the following:

BIOL 217,218	Human Anatomy and Physiology	8
BIOL 251	Genetics	4
BIOL 281	Introduction to Research	1
BIOL 482	Senior Seminar	1
PHED 330	Exercise Physiology	3
PHED 341	Kinesiology	3
Plus an additional 20 hours of co-requisites:		
CHEM 141, 152	General Chemistry	8
PHYS 151, 152	General Physics	8
MATH 181	Calculus I	4

Minor: (13 hours) This Pre-Physical Therapy/Athletic Training minor must be taken with the Pre-Physical Therapy program. (**Note:** Due to changes in Athletic Training curriculum, this minor will undergo changes during fall 2003.)

Required classes

PHED 347	Therapeutic Modalities	3
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	PHED 348	Therapeutic Exercise Mgmt. of Injuries.....	3
	PHED 281	Pre-PT Field Experience I.....	2
	PHED 381	Pre-PT Field Experience II.....	2
	Highly recommended but not required (preferably taken before those listed above):		
	PHED 243	Lower Extremity Pathology and Rehabilitation (3)	
OR	PHED 343	Upper Extremity Pathology and Rehabilitation (3)	
OR	PHED 246	Introduction to Athletic Training	3
	Total:		13

Course Descriptions

PHED 281 Pre-Physical Therapy Field Experience I (2, F)

Mastery of competencies in injury prevention, recognition, and assessment, and taping and bracing techniques, understanding of the lower extremity and medical documentation. Requires 20 hours in orthopedic rehabilitation and 10 hours with geriatric and pediatric rehabilitation. An additional 40 hours is required in assisting with rehabilitation in the Houghton College athletic training room. (Hours logged prior to taking this class may count with instructor's pre-approval.) Pre-PT majors only. Pre-/Co-Req: PHED 247.

NOTE: Fall 2003 is the last time PHED 281 will be offered every year--it will be offered every "odd" year following.

PHED 381 Pre-Physical Therapy Field Experience II (2, S)

Mastery of competencies in injury prevention, recognition, and assessment, and taping and bracing techniques, understanding of the back, upper extremity and developing rehabilitation programs. Requires 20 hours of observation in each of three settings: orthopedics, cardiac, and neural rehabilitation with an additional 20 hours assisting with rehabilitation in the Houghton College training room. Pre-PT majors only. (Hours logged prior to taking this class may count with instructor's pre-approval.) Pre-PT majors only. Pre/corequisites: PHED 347 or 348

NOTE: Spring 2004 is the last time PHED 381 will be offered every year--it will be offered every "even" year following.

(For other descriptions, see the appropriate section (Biology, Physical Education, etc.)

PRE-SEMINARY

(Consult the chair of the Department of Religion and Philosophy, Dr. Harold Kingdon)

For those who expect to attend seminary after college, The Association of Theological Schools offers the following guidelines:

- Students should develop to a satisfactory degree their ability to think independently, to communicate effectively, and to do research.
- Students should possess a general knowledge of past and present culture through study in the humanities and the natural and social sciences.
- The biblical languages are useful tools to acquire in the pre-seminary period. Latin may be helpful, especially in some traditions. Modern languages such as German, French, and Spanish are also valuable.
- The study of religion is appropriate within a liberal arts education. Students should not, however, anticipate to any considerable extent at the undergraduate level, work that will form part of their seminary program. Such anticipation may narrow the base on which later theological reflection will rest and may also create problems in planning an integrated program in the theological school.

PSYCHOLOGY (major and minor)

Department of Psychology and Sociology: Richard Stegen, chair

Faculty: Richard Stegen, Daryl Stevenson, Cynthia Symons, John Van Wicklin, Paul Young

Major: (31 hours in the major; 4 in pre/co-requisites)

General Information:

The psychology faculty conducts a systematic inquiry into the nature of animal and human behavior, including cognitive and emotional processes. Our commitment is to prepare students to understand events from a psychological perspective and the belief that truth is unified. Our task is to appreciate the contributions of modern psychological theory and practice, and at the same time to view these

critically in light of Christian faith and the inspired Biblical record. We address fundamental issues confronting psychology and faith to help students develop a holistic Christian view of the nature of persons, recognizing that legitimate differences exist within Christian evangelical theology.

Graduates often take further training to pursue such professional careers as clinical and counseling psychology, student and personnel development, school psychology, social work, and human services in general. Others have taken appointments in academic departments. Even without further training, knowledge of psychological functioning within individuals and in group settings is a valuable asset in professions such as law, business, education, therapeutic recreation, and ministry.

Major Information:

Introduction to Psychology (PSY 111) is prerequisite to all additional coursework in the discipline. The major requires 31 hours (of which at least three must be 400 level PSY) beyond that course. Psychology majors complete seven hours of core requirements and then at least one course from each of the five secondary core areas listed below. Finally, at least three other elective courses are selected from the department’s offerings. If a student takes more than one course from a Secondary Core area it may be used as elective credit.

Statistics (PSY 309) and Experimental Methods (PSY 310) should be taken in fairly close sequence during the sophomore and junior years. Students desiring to participate in the optional Senior Fall Semester Internship in Buffalo should plan to work closely with their advisor to complete the appropriate series of courses prior to placement: Experimental Methods, Abnormal Psychology, Psychological Assessment, and Counseling and Psychotherapy. Three of the six internship hours may count toward the minimum 31 hours for the major.

Co-requisite with the major is four hours of laboratory biology.

Students with a double major may take a minimum of 25 hours of psychology coursework, meeting all the major’s regular requirements and reducing electives to three hours.

Primary Core Requirements

PSY 309 Statistics.....	3
PSY 310 Experimental Methods.....	3
PSY 48x Senior Seminar	1

Secondary Core Areas (minimum of one course from each area)

I. Developmental	
PSY 214 Child Psychology, or	
PSY 215 Adolescent Psychology, or	
PSY 230 Lifespan Development of the Family.....	3
II. Social/Personality	
PSY 218 Social Psychology or	
PSY 301 Psychology of Personality	3
III. Learning/Physiological	
PSY 335 Drugs and Behavior, or	
PSY 336 Cognitive Psychology, or	
PSY 403 Physiological Psychology, or	
PSY 451 Learning and Memory	3 or 4
IV. Clinical	
PSY 305 Abnormal Psychology, or	
PSY 315 Psychological Assessment, or	
PSY 402 Counseling and Psychotherapy.....	3
V. Integrative Issues	
PSY 302 Psychology and Christianity, or	
PSY 306 Psychology of Religion, or	
PSY 401 History and Systems of Psychology.....	3
PSY xxx Psychology electives.....	9
Total:	31

Minor: A minor in psychology consists of any 12 semester hours above PSY 111, excluding Statistics (PSY 309), but may not include more than six hours of field experience credit.

Course Descriptions

PSY 111 Introduction to Psychology (3, F&S)
 Scientific study of human behavior. Fundamental facts, theories, issues, concepts, and principles of psychology. **Note: PSY 111 is prerequisite to all other psychology courses.** May include research participation requirements.

PSY 214 Child Psychology (3, F&S)
 Concepts, principles, theories, and research concerning the biological and environmental influences on the behavioral and psychological development of the child from conception to puberty.

- PSY 215 Adolescent Psychology** (3, F04)
Examines physical, cognitive, social, moral, and religious development from pubescence to early adulthood with attention to various forms of disturbance and self-destructive behavior.
- PSY 218 Social Psychology** (3, F)
Introduction to social behavior from a psychological perspective. Individual behavior as it affects/is affected by the behavior of others. Topics: prejudice, group processes, leadership, conformity, attitudes, change.
- PSY 230 Lifespan Development of the Family** (3, S)
A consideration of developmental theory and research related to family composition throughout the lifespan. Attention will be given to nontraditional families as well as to events that affect family development including divorce, abuse, alcoholism, mobility, poverty, and death.
- PSY 252 Exceptional Child** (3, F&S)
Introduction to special education; special needs of gifted, learning and emotionally disabled, and culturally disadvantaged children.
- PSY 301 Psychology of Personality** (3, F&S)
Description, development, dynamics, and determinants of the normal personality. Emphasis on contemporary theories. Prerequisite: six hours in psychology
- PSY 302 Psychology and Christianity** (3, S)
Evaluation of works attempting to integrate psychology and biblical/theological understanding. Discussion of integration models and a conceptual framework for integration. Prerequisite: six hours in psychology
- PSY 305 Abnormal Psychology** (3, F&S)
Etiology, dynamics, and treatment of abnormal behavior. Prerequisites: six hours in psychology
- PSY 306 Psychology of Religion** (3, F)
Study of religious and spiritual experience and behavior from a psychological perspective. Covers such topics as conversion, faith, mysticism, spiritual development, etc. and examines the origin and nature of religion according to great psychological and theological thinkers such as Kierkegaard, Freud, Jung, Maslow, Tillich, and Frankl.
- PSY 309 Statistics** (3, F&S)
Study of descriptive and inferential statistics, including analysis of variance and measures of correlation. Focus on applications to social and psychological data. (Also listed in BADM, SOC, POLS)
- PSY 310 Experimental Methods** (3, F&S)
Experimental and other quantitative methods used in the study of behavior. Applied statistical analysis, laboratory experiences, and research writing. Prerequisite: PSY 309
- PSY 315 Psychological Assessment** (3, S)
Principles of construction, validation, and use applied to a variety of ability and personality tests. Selected tests administered with guided interpretation. Prerequisite: PSY 309
- PSY 324 Life in the City** (3, F)
(See Off-Campus Programs -- Houghton in Australia for description.)
- PSY 325 Human Sexuality** (3,S)
Examines sexuality as a component of our personalities, an aspect of our behavior, and an element in our environment. Considers how elements of sexuality interact with other aspects of our thought and behavior, and the role of sexuality in normal and abnormal development across the lifespan.
- PSY 326 Introduction to Family Systems** (3, F)
An introduction to the family systems perspective through an overview of various schools of family systems theory. This course is intended to introduce students to the epistemological underpinnings of the family therapy field, but not to teach clinical skills.
- PSY 330 Conflict Management** (3, S04, F)
An introduction to conflict management that balances coverage of major theories with practice in communication skills and conflict intervention techniques (e.g. assertiveness training, mediation, negotiation). Focus on experiential learning, with heavy emphasis on written analysis that includes analytical journaling and analysis of scientific journal articles.
- PSY 335 Drugs and Behavior** (3, F)
Principles of action and categorical analysis of psychoactive drugs; their physiological, psychological, and societal effects; patterns and causes of their use and abuse in individuals and societies; and systems of drug education.
- PSY 336 Cognitive Psychology** (3, S04)
Covers the historical development of cognitive psychology and its emergence as a paradigm; current

and traditional theories of memory; judgment and decision making; and problem solving. Analysis of new and classic psychological studies. Focus on understanding how experimental methods are used to answer questions, and on understanding the logic of studies.

PSY 401 History and Systems of Psychology (3, S04)
Antecedents and evolution of psychological systems and concepts, including the life and works of historically eminent psychologists. Prerequisite: 15 hours in psychology

PSY 402 Counseling and Psychotherapy (3, S)
An introduction to major systems of psychological intervention and their rationale. Emphasis on theory rather than practice. Prerequisite: PSY 305

PSY 403 Physiological Psychology (4, F04)
Physiology of nervous and glandular systems as they relate to behavior, including sensation, emotion, aggression, learning, and mental disorders. Prerequisite: four hours of biology, WRIT 306

PSY 410 Practicum in Psychology (1, 2, 3, F&S)
Introduction to professional work in psychology through field experiences near the main campus in such settings as school psychology, personnel, continuing treatment programs, alcohol and drug abuse treatment centers, and developmental disability centers. Prerequisite: senior status and permission of the department. Contact: Dr. Stevenson

PSY 413 Professional Issues and Techniques in Psychology (3, F)
Taken in conjunction with the Internship; emphases is on professional and ethical issues, interviewing skills, and developing various research and practice skills. (West Seneca Campus only)

PSY 415 Internship in Psychology (West Seneca Campus only) (6, F)
An optional supervised experience in a psychological setting integrating theory with professional practice. By application only through the department. Contact: Dr. Stevenson

PSY 451 Learning and Memory (3, S)
Critical examination of the main psychological theories of learning, memory and information processing, with applications in teaching, research, and therapy. Prerequisite: six hours in psychology.

PSY 482 Senior Seminar (1, F&S)
Informed discussion of significant and contemporary concepts and issues. Includes development of an individual research or group project on some aspect of the discipline. Required of all senior majors. Prerequisites: PSY 309, PSY 310, and 21 hours of psychology. (PSY 413 may be substituted by instructor's permission.)

PSY 211, 311, 411 Special Topics in Psychology (1, 2, 3, or 4, OD)
According to interest and demand, courses will be offered in Adult Development and Aging, Israel Seminar, Cross-cultural Psychology, and other topics. Prerequisites vary with the course.

PSY 191, -2; 291, -2; 391, -2; 491, -2 Independent Study (1, 2 or 3)

PSY 496 Honors in Psychology (3, S)

RECREATION & LEISURE STUDIES (major and minor)

Department of Physical Education/Exercise Studies & Recreation/Leisure:

William R. Swanson, chair

Faculty: Thomas R. Kettelkamp, Beth Markell, Robert Smalley

Major: This major in recreation and leisure studies provides two option areas: Therapeutic and Outdoor Education/Camp Administration. All students will take the core requirements listed below.

Core Requirements

REC 220 Recreation, Leisure and Society	3
REC 221 Intro of Leisure Service Delivery Systems.....	3
REC 300 Program Planning and Evaluation.....	3
REC 406 Recreation Internship	3
REC xxx (elective).....	3
Total:	15

Recreation/Leisure (Therapeutic Option - 31 hours; 11 hours in pre/co-requisites)

All students will take the above core . The practicum provides opportunity for applying theory and practicing professionally related activities.

(Students wishing to be certified with the National Council of Therapeutic Recreation Certification should design their coursework directly with the department chair.)

Co-requisites	
PSY 111 Introduction of Psychology	3
BIOL 103 Introduction to Biology	4
BIOL 217 Anatomy and Physiology	4
Total:	11
Theory Requirements	
REC 248 Foundations of Therapeutic Recreation.....	3
REC 303 Methods and Materials of Therapeutic Rec	3
REC 409 Seminar: Issues in Therapeutic Recreation.....	3
REC or PHED Applied labs (as approved by dept. chair).....	7
Core requirements	15
Total:	31

Recreation/Leisure (Outdoor Education/Camp Administration Option - 32 hours; 8 hours in pre/co-requisites)

Co-requisites	
BIOL 215 Local Flora and Vegetation	3
REC 102B Backpacking	1
XXX xxx (4-hr. science course with environmental emphasis	4
Total:	8
Theory Requirements	
REC 301 Methods & Mat'ls for Camps & Outdoor Educ.	3
REC 240 Administration of Organized Camps.....	3
REC 227 Outdoor Leadership Training	3
REC 266 Outdoor Living Skills	2
REC 401 Natural Resources Management.....	3
REC 411 Seminar: Recreation and Leisure	2
Core requirements	15
Total:	31

Minor (14 hours)

Courses numbered 200 or above, including REC 220, REC 221, and REC 411. The remaining six hours may be selected from any REC courses, with at least two hours but not more than five in activity labs.

Course Descriptions

REC 102A **Initiatives/REC 102B Backpacking** (IS alternative) (Activity Lab) (1, F&S)
Physical skills and carry-over values of recreational activities. Place of recreation and leisure in Christian Life (also meets PHED 102 requirement.)

REC 109 **Highlander Adventure Program** (Activity Lab) (IS alternative) (2, Special)
Two to three days on the initiatives course and a seven-day trip into the wilderness. Develop skills in rock climbing, rappelling, backpacking. Open only to incoming first-year and transfer students. Offered 10 days before fall semester validation (may be used to meet PHED102 requirement).

REC 211 **Eco-tour in Honduras** (3, M)
Students will have a third-world experience including a service project with Christian Camping International. Visits are made to national parks and Mayan Indian ruins. Activities include hiking, snorkeling, and attending cross-cultural classes. (Meets PHED 102 requirement.)

REC 212 **Eco-tourism in Africa** (3,S)
Students will learn to be stewards of the environment in the African context. Hikes, camping, visits to game parks and preserves, and service projects will be combined with lectures on the interaction with the environment, management of resources, economic impacts of tourism on the local community infrastructure and other issues related to God and His creation. (Meets PHED 102 requirement.)

REC 218 **Winter Ski Outing** (Activity Lab) (1, Special)
Downhill and recreational skiing skills developed at a major resort area. Techniques equal to one's ability will be taught. Offered during break, before spring semester.

REC 220 **Recreation, Leisure, and Society** (3, F)
History, philosophy, and practice of leisure in contemporary society. Theories of leisure, recreation, and play. Students will develop a personal philosophy of leisure.

REC 221 **Introduction of Leisure Service Delivery Systems** (3, S)
History of parks and recreation movement in the U.S.; agencies which provide recreation opportunities, and their roles in recreation and leisure in society; planning and managing programs and resources from a client-oriented perspective.

- REC 227 Outdoor Leadership Training (Activity Lab)** (3, F&S)
Outdoor leadership, in activities such as initiatives, ropes course, rock climbing, and environmental awareness, using skills in judgment, decision-making, problem solving, and basic rescue techniques.
- REC 228 Trip Experience** (1 to 3, M)
As arranged. (May be used to meet PHED 102 requirement.)
- REC 240 Administration of Organized Camps** (3, F04)
Principles and techniques used in organized camp administration; the role of camping in the development of personality. Staff and program development.
- REC 248 Foundations of Therapeutic Recreation** (3, F04)
Conditions which characterize and produce atypical individuals; diagnosis of strengths and weaknesses of the individual; prescription of procedures for appropriate activities. Prerequisite: BIOL 103, 217.
- REC 252 Teaching Lifetime Sports (Activity Lab)** (1, S05)
Skills and methods of teaching. Student notebooks including methods, mechanical analysis of skill for each sport: skiing, canoeing, archery.
- REC 266 Outdoor Living Skills (Activity Lab)** (2, S)
Skills in using the environment for outdoor living; ropecraft, firecraft, cooking; using gear, shelters, maps, compass, campsite; selecting foods; health and safety practices (one lecture; one two-hour lab).
- REC 300 Program Planning and Evaluation** (3, F)
Preparation for leadership in recreation programming; leadership styles and theory; principles and methods of program development; using fundamental leisure philosophy and theory to assess needs, plan, develop, implement, and evaluate recreational programs.
- REC 301 Methods & Materials for Camps & Outdoor Education (Activity Lab)** (3, F04)
Outdoor education. Field experience in lesson planning; development of organized camp programs, activities, structured programs (cabin, campfire, work, etc.).
- REC 302 Principles of Church Recreation** (3, OD)
Overview of all aspects of church recreation. Bases for recreation in local church; methods and designs for implementing programs; recreation activities for churches without specialized recreation facilities.
- REC 303 Methods & Materials in Therapeutic Recreation** (3, S05)
Pre-practicum experience. Participation in observation, needs assessment, program planning, and leadership of special population groups in appropriate therapeutic recreation settings.
- REC 311 Special Topics** (OD)
According to interest and demand, courses will be taught relative to various therapeutic approaches to special populations: substance abuse, deviant and antisocial behavior disorders, youth at risk, etc. Prerequisites: REC 220.
- REC 401 Natural Resource Management** (3, S)
Investigating Christian environmental ethics; identifying and protecting biologically sensitive areas; rehabilitating damaged areas and resources; sound ecological practices; controlling user behavior; site problems; resource management plans.
- REC 406 Recreation Internship** (3 to 6, OD)
Professional field experience in the area of emphasis; the student will relate theory to practice in a cooperative effort between agency, student, and advisor. Permission of instructor required.
- REC 409 Seminar: Issues in Therapeutic Recreation** (3, F03)
Leisure behavior as it affects therapeutic recreation services. Issues: T.R. certification, accessibility, therapeutic models for special populations; special attention to geriatric and psychiatric persons. Permission of instructor required.
- REC 411 Seminar: Issues in Recreation and Leisure** (2, S)
Leisure behavior as it affects the natural resources and environment. Solutions to current problems; back-country ethics; organizations working to preserve wilderness areas and open spaces; issues in outdoor recreation as they deal with special populations. Permission of instructor required.
- REC 191, -2; 292, -2; 391, -2; 491, -2 Independent Study** (1, 2 or 3)
- REC 496 Honors in Recreation and Leisure Studies** (1, 2, or 3, OD)

RELIGION (major, major with ministerial concentration, and minor)

Department of Religion and Philosophy: Harold Kingdon, chair

Faculty: Bradley Beach, John Brittain, Richard Eckley, Carlton Fisher, Harold Kingdon, Kristina LaCelle-Peterson, Benjamin Lipscomb, Terence Paige, Carl Schultz, Paul Shea, W. Christopher Stewart, John Tyson, J. Michael Walters

Major (BA): (38 hours)

General Information

The **comprehensive major in religion** is provided for those who want a liberal arts degree with a maximum of Biblical and theological studies. This curriculum is generally accepted for entrance into seminary or other graduate institution, and is satisfactory for students going into missionary work that requires a liberal arts degree.

The **religion major with ministerial concentration** curriculum is a four-year terminal program designed to prepare students for pastoral ministry service. This curriculum is so structured that all academic requirements for ministerial ordination in The Wesleyan Church can be fulfilled. Students interested in Wesleyan ordination should consult the religion department chair, or the director of ministerial education, for particular course requirements. This program will also contribute to the ordination requirements of other denominations. A student in this program will complete 38 hours in a specified core of religion courses and 16 hours in the ministerial concentration.

Specific requirements are:

BIBL xxx Bible 12	
BIBL 221 Biblical Interpretation	3
THEL 351, 352 Biblical Theology	6
THEL 453, 454 History of Christianity	6
PHIL 350 Reason and Religious Belief	2
6 hours from the following three-hour courses:	
THEL 315 Wesleyan Tradition (required for Wesleyan ordination)	
MISS 222 Modern Missions (required for Wesleyan ordination)	
MISS 321 World Religions	
THEL 214 The Cults and New Age	
URMN 212 Urban Ministry	
THEL 334 Studies in Theology	
3 hours from the following:	
SOC 338 Sociology of Religion	
PSY 306 Psychology of Religion	
PHIL xxx Philosophy course	
THEL xxx Theology course	
EDMN 231 Foundations of Educational Ministry (required for Wesleyan ordination)	

Students electing the comprehensive major in religion must satisfy all normal integrative studies requirements, except that Greek must be taken to satisfy the language requirement. A curriculum plan for this major is available through the Department of Religion and Philosophy.

Major with Ministerial Concentration (BA): This combines the above major in religion (38 hours) with a 16-hour ministerial concentration. Students who choose the ministerial curriculum must satisfy all normal integrative studies requirements, except that Greek must be taken to satisfy the language requirement. A curriculum plan for this program is available through the Department of Religion and Philosophy. The concentration curriculum is as follows:

MIN 316 Worship in the Church.....	3
MIN 317 Leadership in the Church.....	3
MIN 324 Principles of Expository Preaching.....	4
MIN 410 Ministerial Field Education.....	3
URMN 250 Evang & Social Action in the Urban Context.....	3

Minor: (12 hours)

Required courses:

THEL 321 World Religions	
PHIL 350 Reason and Religious Belief	

Select additional courses from the following:

THEL 215 Christian Apologetics	
THEL 313 Systematic Theology	
THEL 351 Biblical Theology: Old Testament	

Course Descriptions

MIN 210 Introduction to Christian Ministries (3, F)

Investigation of the Biblical, historical, and practical foundations for ministry as essential components of Christian vocation. Lay and professional aspects of ministry are explored in the context of the vocational call. A broad overview of ministry-related fields will be presented, including parish, educational, cross-cultural, and para-church ministries. This course is recommended for anyone who is interested in any form of full-time ministry.

MIN 316 Worship in the Church (3, F04 & alternate years)

An exploration of the Biblical and theological foundations of the pastoral office. Special emphasis is given to the pastoral role in the worship of the church and the challenges of leading a worshiping community. Examines ministerial duties related to the sacraments and the rituals of the church as well as issues of pastoral ethics.

MIN 317 Leadership in the Church (3, S05 & alternate years)

Study of the pastoral office as it relates to the roles of counselor and administrator. Theories and techniques of pastoral counseling are considered. The administrative duties of the pastor are emphasized, with particular focus on church management, Parliamentary Law, and *The Discipline of The Wesleyan Church*.

MIN 324 Principles of Expository Preaching (4, S)

Focus is given to the preparation and delivery of sermons. Combines the theory of organizational structure along with the tools and techniques for biblically-based preaching. Includes practice in preparing and preaching various types of expository sermons. Prereq: Public Speaking or permission.

MIN 325 Life in the City (3, F)

(See course description in Off-Campus Programs--Houghton in Australia section.)

MIN 410 Ministerial Field Education (3, summer)

Professional field experience in a local church, during a summer internship. Combines theory and practice of ministry through seminars and on-site supervision; focuses upon pastor as worship leader and pastor as shepherd.

URMN 250 Evangelism and Social Action in the Urban Context (3, May)

Examination of the biblical basis of evangelism and social justice. Through biblical, historical, and sociological/anthropological analyses and personal observation projects, students will assess ways in which evangelism and social action are related, and will have an opportunity to develop their own theology and strategy of outreach. Taught on West Seneca Campus.

SOCIOLOGY (major and minor)

Department of Psychology and Sociology: Richard Stegen, chair

Faculty: Jonathan Arensen, Jayne Maugans, Richard Perkins

Major: (24 hours in the major)

General Information

Human conduct cannot be adequately understood without recognizing various social forces constantly shaping it. Sociology seeks to draw analytical links between individuals and the structural and cultural contexts in which they live. The major in sociology therefore develops analytical skills that are basic to a liberal arts education. These skills are useful to students wishing to develop an intellectual awareness of who they are and others around them as a result of studying the social system surrounding them. In particular, sociology is excellent preparation for students anticipating careers in criminology, politics, law, health services, management, ministry and missions, social work, urban planning and related areas.

Principles of Sociology (SOC 101) is prerequisite to all additional coursework in the disciplines except anthropology.

Required courses:

- SOC 282 Sociological Theory..... 3
- SOC 309 Statistics..... 3
- SOC 312 Social Science Research Methods 3

SOC 351 The Individual and Society	3
Elective sociology courses	12

Minor: (12 hours above SOC 210, including at least three hours numbered 300 or above - except 309 Statistics)

(NOTE: No minor may include more than six hours of field experience credit.)

Course Descriptions

- SOC 101 Principles of Sociology** (3, F&S)
Introduction to the sociological perspective; development and systematic use of concepts. Satisfies integrative studies requirement in the social sciences. *NOTE: SOC 101 is prerequisite to all other sociology coursework, except anthropology.*
- SOC 222 Social Problems** (3, S)
Survey of contemporary social problems in American society. Analyses based on conflict and labeling theories, emphasizing ideological origins whereby certain behaviors are defined as problems.
- SOC 231 Criminology** (3, OD)
Consideration of elements in criminal justice system. Discussion of dilemma of promoting social order while protecting individual rights.
- SOC 237 Introduction to Marriage and Family Studies (CDRP, see Foreign Languages)** (3, F)
The changing structure and functions of marriage and the family in modern society; emphasis on dating patterns, marriage selection, sex roles, childbearing patterns, and family life cycles.
- SOC 243 Cultural Anthropology (CDRP, see Foreign Languages)** (3, S)
Cultural and social aspects of human behavior; comparison of cultures.
- SOC 275 The Criminal Justice System** (3, F)
This course will examine the dilemma involved in the relationship between "law and order" within liberal societies like the United States. In democratic "free" societies, there is a constant tension between the need for social order (and police efficiency in suppressing crime) and procedural law involving Constitutionally protected rights. We will examine the police, courts, prisons, probation and parole systems in light of this tension.
- SOC 282 Sociological Theory** (3, F)
Consideration of the major 19th century contributors to sociological theory of the 20th century; sociological perspectives they helped to form: functionalism, conflict theory, symbolic interaction.
- SOC 293 East African Cultures** (3 or 4, S)
(See course description in Off-Campus Programs-Tanzania section.)
- SOC 295 Special Topics in Sociology** (3, OD)
Topics offered according to interest and demand.
- SOC 296 Special Topics in Anthropology** (3, OD)
Topics offered according to interest and demand.
- SOC 297 Special Topics in Family Studies** (3, OD)
Topics offered according to interest and demand.
- SOC 309 Statistics** (3, F&S)
Study of descriptive and inferential statistics, including analysis of variance and measures of correlation. Focus on application to social and psychological data. Recommended for sophomore year.
- SOC 312 Social Science Research Methods** (3, S)
Basic scientific method, application to social phenomena; procedures and methodological problems in various types of social research; methods of data analysis. Recommended for junior year, after completion of SOC 309.
- SOC 322 Social Stratification** (3, S)
Major theories and evidence relating to the origin, nature, and social consequences of stratification systems of social inequality in contemporary United States.
- SOC 325 Life in the City** (3, F)
(See Off-Campus Programs -- Houghton in Australia.)
- SOC 330 Culture and Family (CDRP, see Foreign Languages)** (3, S)
A multicultural and cross-cultural exploration of family environments, history, processes, and structures in various types of societies throughout the world, relying on sociological and anthropological principles.

- SOC 338 Sociology of Religion** (3, S)
Study of collective religious behavior from social scientific perspective; examine social factors related to secularization, rise of new religious groups, patterns of contemporary belief and practice.
- SOC 345 Sociology of Aging** (3, OD)
Examines the aging in America as an interdisciplinary topic. Analysis of the socio-historical and socio-political dimensions of aging. Multicultural perspectives included.
- SOC 351 The Individual and Society** (3, S)
Examines the major dilemmas that profoundly affect life in post-industrial Western society: dilemmas between individual freedom and social equality, and between rational organization and community.
- SOC 361 Majority-Minority Relations** (3, S)
Examines relationships between dominant (majority) and subordinate groups (minority), covering racial, ethnic, and religious conflicts in the U.S. and around the world. Analyzed are forms and causes of prejudice and how to reduce it, the origins of inequality, the effects of colonialism and modernization, and current trends in majority-minority relations.
- SOC 362 Gender Relations** (3, F)
Introduction to gender relations; focus on gender roles over life cycle. Includes multicultural perspectives on gender relations.
- SOC 390 Practicum in Family Studies** (1,2,3, F&S)
Supervised experience in a family services setting integrating theory with professional practice. Requires junior or senior standing and the completion of at least nine hours in the Family Studies minor and permission of the department. Contact: Dr. Maugans.
- SOC 394 Internship in Family Studies** (6,F&S)
An optional supervised experience in a family studies setting integrating theory with professional practice. By application only through the department. Contact: Dr. Maugans
- SOC 410 Practicum in Sociology** (1, 2, 3, F&S)
Supervised experience in a sociological setting integrating theory with professional practice. Requires permission of the department. Contact: Dr. Maugans
- SOC 415 Internship in Sociology** (6,F&S)
An optional supervised experience in a sociological setting integrating theory with professional practice. By application only through the department. Contact: Dr. Maugans
- SOC 191, -2; 291, -2; 391, -2; 491, -2 Independent Study** (1, 2 or 3)
- SOC 496 Honors in Sociology** (3, S)

SPANISH (see Foreign Languages)

THEOLOGY (minor)

Department of Religion and Philosophy: Harold Kingdon, chair

Faculty: John Brittain, Richard Eckley, Harold Kingdon, Kristina LaCelle-Peterson, John Tyson, J. Michael Walters

Minor: (12 hours)

The theology minor provides concentrated study in Christian doctrine, apologetics, and church history.

Minor required courses:

THEL 313 Systematic Theology 3

Remaining hours 9

(selected from the following list except THEL 209)

Course Descriptions

THEL 209 Introduction to Christianity (3, F, S)

An introductory survey of the main beliefs and practices that constitute the Christian tradition. Christianity will be approached in a way that overcomes the traditional division between doctrine and practice. The Biblical, theological, historical, ethical, and spiritually formative aspects of Christian faith will be explored. The course aims to enable the student to develop a personal theology and life perspective that is informed by Christian faith and Christian spirituality. Prerequisite: BIBL 101

- THEL 214 The Cults and New Age** (3, May)
Definition and classification of Christian cults and the New Age Movement, including the Occult. Origins and doctrines of, plus practices and trends in, some of the current Christian cults and New Age groups (e.g. Mormons, Jehovah's Witnesses, Transcendental Meditation).
- THEL 215 Christian Apologetics** (3, S04 and alternate years)
The course seeks to "give reason for the faith that is written within us" by making theological reply to those questions raised when Christian faith collides with contemporary situations. Classical and contemporary questions and methodologies will be considered.
- THEL 300 Christianity and Postmodernism** (3, F)
(See course description in Off-Campus Programs--Houghton in Australia.)
- THEL 313 Systematic Theology** (3, F03 and alternate years)
Survey of the main tenets of the Christian faith. Doctrines examined in light of Biblical basis and constructive formulations. Introduces the student to Christian theology and equips the student to develop a personal theology.
- THEL 315 Wesleyan Tradition** (3, F)
Study of the Wesleyan movement from the Wesleys to the present. Emphases on the history of The Wesleyan Church and the doctrine of holiness.
- THEL 320 Spiritual Formation** (3, F)
Examines the nature and process of spiritual growth and maturation in the life of the Christian. As an academic course of study, this class arises out of ascetical theology and thus emphasizes the writings of early, medieval, and later Christians. Primary emphasis is given to the role of the classical spiritual disciplines in the formation of character. Prerequisites: THEL 209
- THEL 321 World Religions** (3, S)
Background, major teachings of Eastern religious and philosophical thought. Emphases on understanding and evaluating non-Western ideas, practices.
- THEL 333 Major Figures in Theology** (3, OD)
In-depth study of one or more figures in Christian theology, with an emphasis upon primary source material for examining the theologians in the context of their lives and times.
- THEL 334 Studies in Theology** (3, OD)
Topics of current theological interest. Specific schools of theology, doctrines, or theological trends will be considered.
- THEL 337 Theological Foundations of the Family** (3, OD)
Study of major conceptual designs for family. Will emphasize a comparative analysis of religious models and the relationships between these influential systems and family practices. Introduces students to the role of the family in ethical value formation.
- THEL 351, 352 Biblical Theology** (3/3, F04/S05 and alternate years)
Examination of the teaching of the Old and New Testaments, developed from the distinctive perspective of Biblical theology. Major themes and methods of inquiry. Fall: Old Testament; spring: New Testament.
- THEL 368 The Reformation** (3, OD)
(Alternative number for history major credit: HIST 368) A survey of the continental, English, and Roman Catholic reformation of the sixteenth century.
- THEL 453, 454 History of Christianity** (3/3, F/S)
Ancient, medieval, modern development of Christianity in historical context; doctrines, prominent lives, institutions of each era. Fall: ancient to medieval; spring: reformation through modern. (Integrative Studies credit)
- THEL 191, -2; 291, -2; 391, -2; 491, -2 Independent Study** (1, 2 or 3 hours)
- THEL 496 Honors in Theology** (3, S)

URBAN MINISTRY (minor)

(see also Intercultural Studies urban ministry concentration)

Department of Religion and Philosophy: Harold Kingdon, chair

Faculty: Richard Eckley, Marvin Scroggins, Paul Shea

Minor: (15 hours)

It includes the four courses listed below and Foundations of Educational Ministry (EDMN 231), or

Course Descriptions

URMN 212 **Urban Ministry** (3, OD)

What is the ministry of the church and individual Christians within diverse, complex metropolitan areas? Introduction to the Bible and to research in behavioral sciences on the city, with field trips and projects in the community.

URMN 250 **Evangelism and Social Action in the Urban Context** (3, May)

Examination of the Biblical basis of evangelism and social justice. Through Biblical, historical, and sociological/anthropological analyses and personal observation projects, students will assess ways in which evangelism and social action are related, and will have an opportunity to develop their own theology and strategy of outreach. Taught on West Seneca Campus.

URMN 300 **Urban Ministry Field Experience and Seminar** (3, OD)

Supervised field experience in a core-city church or para-church organization. Seminar with weekly cluster meeting of participating students to synthesize academic and field experience as a group. Requires 120 hours of field work. Prerequisites: URMN 212 and declaration of minor.

URMN 325 **Life in the City** (3, F)

(See course description in Off-Campus Programs--Houghton in Australia.)

URMN 350 **The City in Biblical and Theological Perspective** (3, OD)

In-depth survey of the Scriptures from Genesis to Revelation examining the city as symbol and social reality. Analysis of various theological perspectives (Augustine, Ellul, Cox, Mouw, and others). Prereq: URMN 212, and declaration of minor.

WRITING (major and minor)

Department of English and Communication: Douglas M. Gaerte, chair

Faculty: Charles E. Bressler, Laurie A. Dashnau, John R. Leax, Linda M. Woolsey, James A. Zoller

Major: (30 hours in the major; 6 of those hours may be taken outside the department)

General Information:

The writing major provides students with a strong liberal arts preparation for a variety of careers including journalism, publishing, law, advertising, public relations, and business. The major is designed to help students develop their skills in recording and communicating information as well as their ability to use writing as a tool for thinking, forming ideas, and solving problems.

Required courses.....9

Advanced Composition: Rhetorical Patterns (WRIT 212)

Writer's Workshop (WRIT 401, 402)

The remaining 21 hours of the major are contracted with an advisor from the writing department. This contract is filed with the records office when a student declares a writing major. Students are not permitted to count more than two writing courses a semester toward their major.

Minor (12 hours)

Course Descriptions

WRIT 211 **Advanced Composition: Narrative and Personal Essay** (3, F,S)

A course in the informal essay based on personal experience. Emphases on descriptive and narrative techniques, craftsmanship, style.

WRIT 212 **Advanced Composition: Rhetorical Patterns** (3, F,S)

A course in formal expository and persuasive writing in patterns such as process analysis, definition, comparison and contrast, cause and effect. Includes library research.

WRIT 213 **Advanced Composition: Writing about Literature** (3, F,S)

A course in writing literary criticism on the four major genres and in typical formats such as character analysis, poetry explication, annotated bibliography. Development of critical vocabulary in the field.

WRIT 301 **Writing of Fiction** (3, F)

Techniques of the traditional short story.

WRIT 302 **Writing of Poetry** (3, S)

Techniques of open and closed verse.

- WRIT 303 Periodical Writing** (3, S)
Advanced techniques of magazine features and article writing. Study of free-lance periodical markets.
- WRIT 306 Creative Nonfiction: Writing about Nature, Landscape, and the Environment** (3, S)
Keeping a writer's field journal, the experience in nature essay, and feature articles. Survey of environmental journals and internet resources.
- WRIT 307 Creative Nonfiction: Writing about Spiritual Experience** (3, F)
Keeping a spiritual journal, writing and evangelism, the meditative essay, devotional writing. Survey of the religious marketplace.
- WRIT 308 Creative Nonfiction: Writing about Cultural Issues** (3, F)
Identifying issues from all areas of contemporary life. Identifying approaches to these issues. Writing columns and editorials. Writing for specific audiences.
- WRIT 320 Special Topics in Writing** (3, OD)
Opportunity for study of issues and problems of writing not covered elsewhere in the curriculum.
- WRIT 401, 402 Writer's Workshop** (3, F&S)
Workshop-based, project-centered, portfolio development, writing community experience for senior majors and minors. Intensive writing in genres selected by students. Integration of faith and creativity. Three hours writing studio, one hour workshop/lab each semester. 401 devoted to early drafting and consultation with instructor; 402 to revision, polishing, portfolio development and class workshop. 401 must be taken first. Students enrolled in Writer's Workshop should also enroll in the discussion section.
- WRIT 412 Literary Criticism** (3, F)
Theoretical and practical study of the principles of criticism. Emphasis on contemporary critical schools. Brief historical survey. Prerequisite: six hours of literature above ENGL 210.
- WRIT 291, -2; 391, -2; 491, -2 Independent Study** (1, 2, or 3)
- WRIT 496 Honors in Writing** (3, S)

YOUTH MINISTRY (see Educational Ministries, Youth Concentration)