



The
UNIVERSITY

OF VERMONT

CATALOGUE

2006-2007

U.S. \$39

Contents

Academic Calendar

Introduction

The mission of the University of Vermont is to prepare students to lead productive, responsible, creative lives and

1952, the University recognized early the value of graduate education, awarding its first master's degree in 1807. Today, the Graduate College offers 52 different master's programs of study and 22 doctoral programs. During the 2004-2005 academic year, 430 master's and 59 doctoral degrees were awarded. The College enrolls approximately 1,300 students, with about 400 of these pursuing the doctorate.

The combination of sound library holdings, laboratories, and computer facilities, along with the engaging size of the University, affords a unique opportunity to pursue high quality graduate programs in a challenging yet personable environment.

A variety of scholarships, fellowships, assistantships, and loan programs are available in limited numbers to students with solid and sustained records of academic performance.

College Of Medicine

The UVM College of Medicine is one of the oldest and most respected medical schools in the nation. Since its establishment in 1822, the College's mission has been the education of undergraduate and medical students. This has evolved to include the education of residents, graduate students, and postdoctoral fellows, as well as continuing medical education of health professionals in the state, region, and the nation. During the past 30 years the College's mission has embraced cutting-edge health research, accessible high quality patient care, and community/public service. Physicians educated or trained at the UVM College of Medicine and its affiliated health care organization — Fletcher Allen Health Care — are a vital part of the region's health care work force, accounting for nearly half of Vermont's physicians.

This catalogue includes the M.S. and Ph.D. programs that are offered in conjunction with the Graduate College. For more information on M.S., Ph.D. and M.D. programs please refer to the Online Catalogue: www.uvm.edu/academics/catalogue2006-07.

Continuing Education

Continuing Education (CE) serves the University of Vermont's commitment to lifelong learning and statewide outreach. Through the development and delivery of courses and programs on the UVM campus, online, and at designated off-campus locations (regionally, nationally, and internationally), Continuing Education connects the resources of the University with the needs of diverse non-degree students year-round and undergraduate and graduate students during the summer and winter sessions. CE's innovative courses, programs, certificates, and professional education opportunities attract more than 8,000 individuals from Vermont and beyond.

Advising services are available to anyone enrolled in Continuing Education or who may be interested in enrolling in the future. Advisors are well versed in non-traditional student issues, available to answer questions about educational opportunities at the University, and can refer potential students to the appropriate offices when necessary. In addition to discussing admission and academic requirements, advisors also help resolve administrative problems and answer questions about University policy.

The Continuing Education office is located at 322 South Prospect Street, (802) 656-2085 / (800) 639-3210. CE's web address is learn.uvm.edu and our email address is learn@uvm.edu.

University Extension

UVM Extension is one of the doors The University of Vermont for Vermonters. Extension faculty and program

staff, located on-campus and in all regions of the state, offer up-to-date information to help Vermonters make informed choices, answer questions, and solve problems.

Extension provides a two-way link between the University and the people of the state — using knowledge and research to meet their needs and bringing back to the University the real-life questions and concerns needing further research. Areas of priority are agriculture; community resources and economic development; natural resources and environmental management; nutrition, food safety, and health; and youth and family development.

University Libraries

The main unit of the University libraries, Bailey/Howe Library, provides services, print, and electronic resources relating to the humanities, social sciences, and many of the

Theatre

The Royall Tyler Theatre is the home for the season of plays presented by the Department of Theatre. Our season is made up of three main stage productions, a holiday play for children, and an evening of one-act plays directed, performed, and designed entirely by students.

The Department of Theatre, in collaboration with the University Resident Theatre Association (URTA), brings professional guest artists — performers, directors, designers — to work side-by-side with students on our main stage productions.

The arts are vital to individuals as well as civilizations, and the Department presents the fruits of the artistic work of students and faculty alike. Within the context of a liberal arts college, the theatre program in the classroom and on the stage and public platform attempts to expose its audience to its theatrical heritage. A rich curriculum is enhanced by an adventurous production schedule. The Department also offers courses and activities in public speaking and debate, the excellence of which are nationally recognized. All members of the UVM community are encouraged to participate in these programs and to share the Department's commitment to vital living theatre.

Music

Opportunities for participation and appreciation are available for students with strong musical interests. The University Choir, Choral Union, and Catamount Singers are open by audition to students seeking participation in choral ensembles. The University Band, Jazz Band, Vermont Winds, Brass, Tuba, and Percussion ensembles, Trombone Choir, and University Orchestra provide performance opportunities for instrumentalists. All perform in various public presentations during the year. On occasion, the Choir and Choral Union have been invited to perform with the Vermont Symphony Orchestra; the University Pep Band performs at athletic events, and the Band mounts a spring tour. The University Orchestra presents several varied concerts of standard orchestral literature plus concertos featuring outstanding music students or combines forces with the vocal ensembles for presentation of major choral works.

In addition to the larger ensembles, faculty and senior recitals, special departmental concerts, and guest artists are scheduled throughout the school year. Individual instruction on all orchestral instruments, piano, organ, harpsichord, guitar, and voice may be arranged (contact the Music Department office for specific information).

The offices of the Music Department are located in the Music Building on Redstone Campus. An important feature of this facility is its beautiful recital hall, which houses the C.B. Fisent also offers c3a08 TDw(oBru students.)1 TChorarchtfine instruments

College of Arts and Sciences distribution categories including intermediate-level foreign language study. Membership criteria are published on the Web; interested students and advisors should consult the chapter president.

Mortar Board is a national society for senior women and men. Although membership in Mortar Board comes as a high honor for a UVM student in recognition of outstanding service, scholarship, and leadership, it is also a challenge for continued unselfish service in the best interests of the college campus.

Golden Key National Honor Society recognizes the top fifteen percent of juniors and seniors in all fields of study. The society emphasizes scholarship and community service.

The **Society of the Sigma Xi**, established in 1945, initiates

College of Education & Social Services

Recommended: One year of biology for Human Development and Family Studies and Social Work majors. Math and science course work beyond the minimum for teacher education majors.

College of Engineering & Mathematical Sciences

Required: Four years of mathematics, including trigonometry or pre-calculus. One year of chemistry and one year of physics for all engineering majors. All other majors: two years of a laboratory-based science.

Rubenstein School of Environment and Natural Resources

Required: One year of biology.

Recommended: Fourth year of college preparatory math and additional science.

College of Nursing and Health Sciences

Required courses: One year of biology and one year of chemistry for all majors; four years of math, including trigonometry, for all majors outside of nursing; one year of physics for athletic training majors.

Recommended: One year of high school physics for Radiation Therapy; Nuclear Medicine Technology; and Medical Laboratory Science majors.

Application Deadlines, Notification Dates, and Enrollment Deadlines

November 1 — First-year and Transfer candidates. Notification is on a rolling basis no later than the end of December. Payment of a \$300 acceptance fee as proof of intention to enroll is generally due 20 days beyond the date of the letter of admission.

November 1 — Early Action deadline for first year candidates only. Notification is in late December. Early Action candidates have until May 1 to pay the fee; this program is non-binding.

January 15 — Regular First-Year candidates. Notification is in late March. A \$300 acceptance fee is due May 1 as proof of intention to enroll.

April 1 — Transfer deadline. Notification is on a rolling basis.

International students should adhere to all application deadlines. Notification is on a rolling basis.

Application and Supporting Materials

To review an application and render a decision, the Admissions Office must receive the following by the appropriate deadlines:

The Application for Admission completed and signed by

deciSeview an applicatil2er. Early AnS1 Tc1Admissi(April sn 483.721AAic opt1.56cf0.04 Tm-0c1 TD0.00950.0096 Tc0.0699 T8-10.0095

High School Diploma (Some home-schooled students receive a diploma from their area secondary school.)

General Education Development (GED) certificates and state certificates.

A Certificate of Completion of a home-study program if the program is recognized by the student's home state.

For transfer students only: If a formerly home-schooled student has completed two years of college course work comparable to UVM course work and has met all entrance requirements, no proof of graduation is required.

Early Action Students applying for first-year status who wish to learn of their admission decision by late December may apply by November 1 under the Early Action program. Candidates admitted under Early Action have until May 1 to pay an Acceptance Fee and are not making a commitment to attend the University.

Early Action applicants are offered admission if their academic records are very strong. Some Early Action candidates will be deferred until the Admissions Office has reviewed all first-year applicants for fall admission. A small number of candidates will learn in late December that they have been denied admission.

New England Regional Student Program The University of Vermont participates with the other public two- and four-year institutions of higher education in the six New England states in the New England Regional Student Program, an option aimed at increasing educational opportunities for the region's students.

New England residents who enroll in UVM programs open to them under the New England Regional Student program are charged 150 percent of in-state tuition, if you were part of the program prior to the 2006-2007 academic year. If you start the program after the 2005-2006 academic year, you will be charged 175% of the in-state tuition.

UVM Bachelor's degree programs offered for the 2006-07 academic year are:

- Botany to residents of MA
- Canadian Studies to residents of CT, MA, NH, and RI
- Classical Languages (Greek and Latin) to residents of CT and RI
- Forestry to residents of CT and RI
- Latin to residents of CT and RI
- Russian to residents of CT, ME, and RI

For a full listing of programs and policies, contact the New England Board of Higher Education, 45 Temple Place, Boston, MA 02111, (617) 357-9620.

Guaranteed Admission Program (GAP) The Guaranteed Admission Program (GAP) provides an avenue of entry to the University of Vermont for students who are not yet ready to enter an undergraduate degree program. GAP provides advising services and guarantees admission after successful completion of approved academic credit courses taken through Continuing Education. The program is administered cooperatively by Continuing Education, Undergraduate Admissions, and the deans' offices of the colleges and schools within UVM.

To qualify for the Guaranteed Admission Program students must have a high school diploma or GED. Students will complete a minimum of 18 semester credits in approved courses as well as courses for the proposed major and general education requirements. Any admissions requirements lacking from high school must also be completed.

A few majors may have additional restrictions or may not be

accessible through the Guaranteed Admission Program. Please contact Continuing Education (Web sit:www.uvm.edu/~learn) for a list of these programs.

Students should call the Continuing Education Office at (802) 656-2085 or (800) 639-3210 to schedule an appointment with an advisor. A high school transcript as well as a transcript for any previous college work should be provided at the appointment.

The advisor will discuss the program and begin the process of determining the courses needed to complete the contract. If a student has earned previous credits, a copy of his/her transcripts will be forwarded to the Office of Transfer Affairs to determine which courses will transfer to UVM upon admission.

This program allows students to apply for admission to Tufts University School of Veterinary Medicine toward the end of their sophomore year at UVM. Accepted students will be guaranteed admission to Tufts after completing a four year B.S. program at UVM. Students will receive their D.V.M. degree from Tufts after successful completion of the Tufts Veterinary School requirements.

This program allows students to complete their B.S. at UVM and gain automatic admission to Massey University Veterinary School, which is accredited by the American Veterinary Medical Association. Students who have completed the basic required courses with a specific GPA, have completed a standardized test, and have had five days of experience with a veterinarian will automatically be accepted into the Massey University Program to obtain their veterinary degree. The program is limited to five students.

The University welcomes applicants who have demonstrated success at other institutions of higher education and who have met all University-wide entrance requirements either in high school or in college. For the purpose of admission, a transfer candidate is one who has taken college-level courses for credit after completion of secondary school.

All transfer students are considered for admission on a space-available, competitive basis.

In making transfer admission decisions, the Admissions Office reviews all academic information available: official transcripts of all college-level work and the high school record (or General Education Development Certificate). Submission of standardized test scores such as the **SAT** or the **ACT** is optional for transfer candidates.

Transfer candidates are subject to the minimum entrance requirements outlined for first-year candidates. Any entrance requirement not fulfilled in high school can be met by an equivalent semester-long college course.

For transfer candidates who have earned under 30 college-level credits, the quality of the high school record remains an important evaluation tool. After 30 earned credit hours, the college grade-point average and course selection are the most important factors in a decision. The Admissions Office still needs to see the high school record to determine if all University-wide entrance requirements have been met.

The minimum grade point average requirement for all transfer candidates is a 2.5 (C+) average on a four-point scale. Generally, to be competitive a 3.0 average or above is recommended.

Transfer Credit Policy

The Office of Transfer Affairs reviews each college-level course taken by transfer candidates accepted for admission. A written evaluation is sent to each transfer candidate indicating the status of each course. To receive transfer credit, a course must have been taken at an accredited college or university for credit; it must be comparable in content, nature, and intensity to a course offered at UVM; and the grade earned must be comparable to a "C" or higher as indicated on an official transcript. The dean of the college or school determines the applicability of the transfer course(s) to the student's degree requirements at the University.

All transfer credit remains provisional until the transfer

Admissions Office, Waterman Building, University of Vermont, Burlington, VT 05405, (802) 656-3160.

The Admissions Office recognizes that candidates who have been out of formal schooling for a period of five years or more have life experiences that are different from traditional-age students.

deletion from documents of irrelevant private data.

The decision of the Residency Officer must be appealed in writing to the Residency Appellate Officer within thirty (30) calendar days of the date of the Residency Officer's written decision. Appeal to the Residency Appellate Officer is the final appeal at UVM.

A student who does not qualify for in-state status classification may reapply for such classification each subsequent semester.

In-state status classification becomes effective the first semester following the date of successful application.

Classification status may be re-examined upon the initiative of the Residency Officer in the exercise of sound discretion. Circumstances such as periodic enrollment may be cause for reexamination.

The student must submit with the application form all relevant information.

The classification decision shall be based upon information furnished by the student, information requested of the student, and other relevant information available consistent with University policies and procedures and legal guidelines.

Testimony, written documents, affidavits, verifications, and/or other evidence may be requested.

The student's failure to produce information requested may adversely affect the decision for instate status.

A student or others furnishing information may request the deletion from documents of irrelevant private data.

In-State Status Classification Appeals

The decision of the Residency Officer must be appealed in writing to the Residency Appellate Officer within thirty (30) calendar days of the date of the Residency Officer's written decision. Appeal to the Residency Appellate Officer is the final appeal at UVM.

In-State Status Reclassification

A student who does not qualify for in-state status classification may reapply for such classification each subsequent semester.

In-state status classification becomes effective the first semester following the date of successful application.

Re-Examination of Classification Status

Classification status may be re-examined upon the initiative of the Residency Officer in the exercise of sound discretion. Circumstances such as periodic enrollment may be cause for reexamination.

Community College of Vermont/ University of Vermont

Students who have completed an associate's degree at the Community College of Vermont can be accepted to the University of Vermont's College of Arts and Sciences under the following conditions:

- Students must complete a minimum of 60 transferable academic credits pre-approved by UVM's Office of Transfer Affairs.
- Students must present a CCV grade-point average of 2.5 (on a 4.0 scale) or better.

- Candidates for the Articulation Agreement must meet UVM's minimum entrance requirements prior to CCV graduation.
- CCV students must initiate their degree program at UVM within two years of completing the CCV associate's degree.
- While at CCV interested students must sign a letter of intent to enroll at UVM.
- CCV Associate Degree students will be held to the policies that are in effect at the time they are admitted to UVM.

Students who have completed a minimum of 30 transferable credits based on the transfer credit policy of the University of Vermont can be accepted into the College of Education and Social Services. The agreement includes the programs in Human Development and Family Studies, Social Work, Teacher Education programs in Art, Early Childhood Education, Elementary Education, and Secondary Education.

- Students must present a CCV grade point average of 2.5 (on a 4.0 scale) or better.
- Candidates must meet UVM's minimum entrance requirements or have prior approval from the College of Education and Social Services.
- To be eligible under the terms of the Articulation Agreement, CCV students must initiate their degree program at UVM within two years of completion of their courses at CCV. Faculty at both institutions will cooperatively certify students as eligible under the terms of the agreement.
- Co-advisement by the appropriate CESS and CCV advisors is essential. Through co-advisement, CCV students may gain secure permission to enroll in beginning-level CESS courses at UVM while enrolled at CCV.
- While at CCV interested students must sign a letter of intent to enroll at UVM.
- CCV transfer students will be held to policies that are in effect at the time they sign the CCV Intent to Transfer form.

The Process Starts at CCV Current or prospective CCV students interested in this option should meet with a CCV advisor early in their college career to develop an Articulation Plan that outlines course work and ensures completion of any UVM requirements in English, foreign language, mathematics, science, and social sciences. At this time, students will provide transcripts of all previous academic work. This allows the CCV advisor to review the record and assess UVM entrance requirements and CCV course placement.

Admissions Process at UVM CCV Articulation candidates are encouraged to meet with a transfer counselor in the UVM Admissions Office to ensure course transferability. Candidates are asked to submit a completed Application for Admission and all financial aid forms by the stated UVM deadlines.

CCV students who have signed the Articulation Agreement do not pay UVM's application fee. Articulation candidates should include a brief statement in the UVM Application for Admission indicating they are applying under this option.

Candidates for UVM admission must submit official copies of all college course work attempted for credit, including the Community College of Vermont transcript. An official high school transcript is required only for candidates who must prove completion of all UVM entrance requirements prior to CCV entry.

UVM Admissions will review articulation student applications for the minimum GPA and entrance requirements. Offers of admission will be sent to those meeting the established criteria. To become a matriculated student at UVM, CCV articulation students must pay an acceptance fee by a date stipulated in the admission letter.

Candidates whose GPAs fall below the minimum will be reviewed by UVM on a case-by-case basis. Those denied acceptance are encouraged to meet with a transfer counselor at UVM to review future options.

For a current list of transferable CCV courses and UVM equivalents, contact a CCV Advisor or a Transfer Advisor in UVM's Office of Admissions. You can also check the Registrar's Office Web site.

Recipients of a CCV associate's degree prior to 1999 may contact the UVM transfer advisors for general transfer information.

CCV graduates interested in UVM programs outside the College of Arts and Sciences and the College of Education and Social Services are encouraged to meet with a UVM transfer counselor to discuss their academic history and potential for transfer admission.

St. Michael's College (SMC) and the University of Vermont in the fall of 1994 established an articulation agreement for a Dual Degree Program in Engineering ("the Program"). This agreement guarantees students who meet specified criteria admission to a prescribed program of study in engineering at UVM. Upon successful completion of the Program and degree requirements, students receive a Bachelor of Arts or Bachelor of Science degree from SMC and a Bachelor of Science degree in the appropriate engineering area from UVM. **Students will normally complete the Program in five years.**

The academic advising, admission, transfer of credits, enrollment, and monetary conditions in this agreement applicable to students will be carried out in accordance with the following policies and procedures.

1. Initial application to the Program will be made to SMC.
2. Students will enroll in the Program by declaring a pre-engineering major at the time of admission to SMC to permit them to complete all prerequisites in a reasonable time (see SMC catalogue for pre-engineering program).
3. Students may register for any of the options in the Civil, Electrical, or Mechanical Engineering programs.
4. Students enrolling under this Program will be considered SMC students throughout the duration of the Program. Once admitted to UVM according to the policies of this Agreement, they also become UVM students for the remainder of the Program.
5. For the first three years the host institution for students in the Program will be SMC, and for the last two years the host institution will be UVM. Tuition and fees will be paid to the host institution according to its normal policies (including residence status, financial aid, etc.) Tuition for courses taken at the other institution will be paid by the host institution transferring funds based on an agreed upon amount per credit hour.
6. While students are enrolled at a host institution they will be independently responsible for appropriate fees at the other institution on a per use basis.
7. Students in the Program will make a formal application to UVM by April 1 in the spring semester of their third year at SMC.
8. Students will matriculate at UVM and will be accepted to the appropriate engineering program at UVM once they have met the following requirements: (a) completion of at least 60 credits at SMC with appropriate courses, in good standing; (b) completion of Part I of the required pre-engineering courses at SMC, as specified in the Agreement (see

SMC catalogue); and (c) completion of 11-12 credits of UVM engineering courses, including the following table of courses, with a minimum GPA of 2.0 in these courses.

Civil Engineering: CE 1, 10/12, 11; ENGR 2; ME 12.

Environmental Engineering: CE 1, 11; ENGR 2; ME 12.

Electrical Engineering: EE 3, 4, 81, 82, 131; ENGR 2.

Mechanical Engineering: ME 12, 14, 40, 42; ENGR 2; CE 1.

Engineering Management:

CE option: ENGR 2; CE 1, 10/12; ME 12, 14.

CE option: ENGR 2; CE 1, 10/12; ME 12, 14.

ME option: ENGR 2; ME 82, 114; MATH 124.

Vermont Technical College/University of Vermont Dairy Farm Management 2 + 2 Program Articulation Agreement

Students who have completed an associate's degree in the Vermont Technical College Dairy Farm Management program can be accepted into the University of Vermont's College of Agriculture and Life Sciences (CALS) in the Animal Sciences program, leading to a bachelor's degree. Transferable courses are limited to those directly comparable to UVM courses and meeting the requirements for both programs.

For acceptance, students must meet the following conditions:

- Students must have a 3.0 (on 4.0 scale) or better.
- Students must meet the minimum entrance requirements for the University and for the Animal Sciences program. A list of these courses can be obtained from the agreement coordinator in the College of Agriculture and Life Sciences.
- All students who do not meet the above conditions can apply for transfer admission and be reviewed on a case-by-case basis.
- Candidates applying to the University of Vermont under this agreement do not pay the application fee.

For more information about this agreement and course equivalencies, please contact the agreement coordinator in the College of Agriculture and Life Sciences at 802-6561397.

Orientation All entering first-year students are required to attend a two-day orientation session in June. At Orientation, new UVM students meet with a faculty advisor, select first semester classes, and learn about living options in the residence halls. Information packets are mailed to incoming students' home addresses once they pay the acceptance fee and advance tuition deposit. Transfer students attend a session just prior to the beginning of the fall semester.

Housing First-time, first-year and second-year students are required to live in on-campus housing. Entering students explore living options at orientation. The Department of Residential Life mails room assignments prior to the beginning of each semester.

Class Registration The academic advisor at Orientation helps prepare the first semester class schedule. First-year students entering fall semester register for classes at June Orientation. First-year students entering in the spring and transfer students entering either semester meet with an academic advisor at an Orientation session and may need to formally register for classes at that time.

Immunization and health history forms are sent directly to newly-admitted students and are due in the Center for Health and Well-being Student Health/Medical Clinic by June 30 of the year of entry. Vermont state law requires proof of two doses of live measles vaccine after the student's first birthday.

Student Expenses

The student expenses outlined in the following paragraphs are anticipated charges for the 2006-2007 academic year. Changing costs may require adjustment of these charges before the beginning of the fall semester. To view charges approved by the Board of Trustees after the May 2006 board meeting please visit the Web site: www.uvm.edu/studentfinances (under the tuition and expenses link).

A nonrefundable application fee of \$45 is charged each applicant for admission to a University degree program.

To reserve a space in the class or semester admitted, students should send the Admissions Office an acceptance fee for \$300 made payable to The University of Vermont.

First-year students entering in the fall have a May 1 deadline for paying the acceptance fee. Transfer candidates and all candidates admitted for the spring semester will have a payment deadline printed with their acceptance materials.

Acceptance fee refunds will be given up until May 1 for students admitted for fall semester. Transfer students and students admitted for spring semester may receive a refund up to the payment deadline noted on the enrollment card

Listed below are estimated expenses (excluding transportation, laundry, and spending money) based on the regular tuition for undergraduate students followed by an explanation of these charges.

	Resident	Nonresident
Tuition	\$9,832	\$24,816
Housing (Double Room)	\$7,642	\$7,642
Comprehensive Student Fee	\$1,491	\$1,491
Inter-Residence Association Fee	\$24	\$24
Optional Student Accident & Sickness Insurance (Estimated)	\$823	\$823
Student Government Association Fee	\$142	\$142
Textbooks and Supplies (Estimated)	\$900	\$900

Vermont Residents: \$410 per credit hour through 11.5 hours. From 12-18 credit hours — \$4,916 per semester plus \$410 per credit hour for each hour in excess of 18 hours.

Nonresidents: \$1,034 per credit hour through 11.5 hours. From 12-18 credit hours — \$12,408 per semester plus \$1,034 per credit hour for each hour in excess of 18 hours.

Note: Courses taken for audit are also included in determining the number of credit hours for which a student is billed.

Room and Board: All housing agreements include both room and board and are legally binding for the nine-month academic year. Each occupant is liable for the yearly rent, one half to be paid each semester.

The University meal plan offers several options. Payment for

the plan selected is made in two equal installments paid at the beginning of a semester. The University's food service system includes not only dining halls but also the various campus snack bars, restaurants, and grocery stores. Questions regarding food services should be directed to the University Dining Services/Sodexo, Robinson Hall, Redstone Campus.

Students not required to live on campus who wish to cancel a housing agreement must do so in writing. Students canceling before July 1 will be assessed a \$150 penalty before July 1 and a \$300 penalty from July 1 to September 1. Unless specifically authorized by the Office of Residential Life, no room cancellations will be honored after the beginning of the fall semester.

This fee is used to cover the operating, capital costs, and improvements of the Library, Student Center, Athletic Complex, Center for Health and Wellbeing, Campus Transportation services, Instructional Technology, and other Student Services.

A \$24 per year (\$12 per semester) fee is charged to each resident to be used for activities within the residence hall system.

Students not covered by the health insurance policy of a parent, guardian, or spouse must purchase the Student Accident and Sickness Insurance Policy.

For additional information please visit the Web page of the Center for Health & Wellbeing (www.uvm.edu/health/insurance).

Undergraduate degree students enrolled in five or more credit hours are charged a fee of \$142 per year (\$71 per semester). This fee is allocated by the Student Government Association toward the support of student organizations and student activities.

Students enrolled in one to four credit hours in a semester will be charged \$10 per credit to offset costs associated with registration.

A comprehensive fee is charged to all part-time students enrolled in five but less than 12 credit hours in a semester, as follows:

Hours Enrolled Per Semester	Fee
5	\$234
6	\$262
7	\$294
8	\$328
9 to 11.5	\$358

The estimated yearly cost of books and supplies at \$900 is a low average. Some particular curricula may require onetime purchases which will change this amount.

including, but not limited to, student loans, dining and housing charges, telephone toll charges, and parking fines.

If a student leaves the University for any reason with an outstanding balance and this balance is not settled in a timely manner, the University may turn the account over for collection. If this is done, any additional collection fees, legal fees, and other costs and charges necessary for the collection of this debt will be added to the outstanding balance.

Students who do not settle their accounts by the due date will be charged a late payment service charge. Please refer to the Payment Information and Financial Policies information on the following web page: <http://www.uvm.edu/studentfinances> then choose a payment process.

The University offers a Monthly Payment Plan to parents who desire to budget annual costs in monthly installments. Specific information is mailed to parents of incoming and returning students in the spring by the Office of Student Financial Services.

A newly admitted undergraduate student for fall semester who decides not to attend the University may request a full refund of the acceptance fee by submitting a written request to the Admissions Office postmarked on or before May 1. After May 1, the acceptance fee is non-refundable.

Transfer students and students admitted for spring semester whose plans to enroll change before the payment deadline noted on the enrollment card, may request a full refund of the acceptance fee. Requests should be made in writing to the Admissions Office.

A student who cancels, withdraws for personal or medical reasons, is suspended, or is dismissed will receive an adjustment of charges in accordance with the following schedule. Medical withdrawals require approval of the University Student Health Center.

- 100% tuition, fees, room and board credit adjustment prior to the end of the first two weeks of classes.

- 50% tuition, fees, room and board credit adjustment through the third week of the semester.

ld be made in writing to th0ing to

The Vermont Scholars Program Each year, UVM names a select group of outstanding Vermont high school students as Vermont Scholars, an academic honor that carries a four-year scholarship. To qualify, candidates generally rank in the top ten percent of their graduating class and present superior scores on the Scholastic Assessment Test (SAT I). Comparable ACT scores are acceptable.

A committee comprising members of the University community reviews all qualified applicants and bases final selection on such factors as secondary school record, recommendations, admissions essays, extracurricular participation, and academic potential. Scholarship recipients are notified by mid-March.

Vermont Scholars receive between \$1,500 and \$8,000 annually in scholarship and grant assistance, depending on need. The scholarship is renewable up to four years (eight semesters) provided a 3.00 cumulative grade-point average is maintained.

The Green and Gold Scholars Program recognizes the academically strongest student at each accredited high school in Vermont with 4-year, full tuition scholarships, currently valued at over \$33,000. At the end of the academic year, the Principal of each school submits a nominee who has completed the 11th grade at the end of the school year. The primary criteria for determining a nominee is limited to academic performance in high school, including rank in class, grade point average, rigor of course work and standardized testing. Green & Gold nominees are awarded four-year full tuition scholarships upon admission to the University. The scholarships are renewable annually providing that the recipient maintains a 3.00 overall grade point average and makes satisfactory progress toward degree completion while in attendance at the University.

UVM Community Service Award

The UVM Community Service Award is available for Vermont residents who have a demonstrated commitment to community and public service. The University Scholarship Committee selects those students that have a proven track record of community service. Community Service Scholars receive between \$1,000 and \$8,000 annually in scholarship and grant assistance, depending on need. Recipients must maintain at least a 2.50 cumulative grade-point average and continue to perform community service while at the University.

Presidential Scholarship Out-of-state students with a superior record of scholastic achievement are eligible for consideration for the UVM Presidential Scholarship. Letters

of recommendation, secondary school record, and extracurricular participation are among the criteria used in making scholarship selections. Presidential Scholars receive a merit scholarship for four years (eight semesters) providing they maintain a cumulative 3.00 grade-point average and continue to make satisfactory progress toward the completion of their degree requirements. Scholarship values range from \$2,000-\$3,500 per year.

Patrick Scholarship The Patrick Scholarship is awarded to academically deserving Vermonters in the amount of \$1,000 per year for four years.

How to Apply for UVM Scholarships

There is no separate application process for most UVM-based scholarships. An applicant will be considered for all UVM scholarships simply by submitting the UVM admissions application. The wealth of information provided in the Admissions application is used in matching students with available scholarships. Additionally, students must file the Free Application for Federal Student Aid (FAFSA) in order to be considered for need-based scholarships. Students will be notified if additional information is needed to apply for a specific scholarship.

Student Services

A student's commitment to strong academic performance coupled with healthy out-of-class pursuits forms the basis for a successful college experience. The units listed and described in this section are meant to acquaint students with some of the offices, services, and programs that offer support for student endeavors, needs, and interests. More detailed information is available in the UVM student handbook, *The Cat's Tale*, which can be accessed on the internet <http://www.uvm.edu/~dosa/handbook/>.

- Living/Learning Center
- Waterman Computer Lab, room 113
- Waterman Cafe

For information and hours visit: www.uvm.edu/cit/computers.

Help!

If you have a computing question or problem and can't find the answer on your own, visit www.uvm.edu/cit/help or call the Help Line at (802) 656-2604.

For detailed network and policy information, access to UVM software downloads, and other services, visit www.uvm.edu/cit.

Connect@UVM

What you can do at [uvm.edu](http://www.uvm.edu)

Go to www.uvm.edu and click on "current students." From there you can:

- Register for classes
- Access the Library
- Access classes
- Shop at the bookstore
- Manage your CatScratch account
- Check out campus activities, and much more...

me.myself@uvm.edu

Your UVM email address* is a key connection for official university correspondence and with professors. Don't miss out! Activate and manage your UVM network ID and email on the Web from anywhere at: webmail.uvm.edu * Typical format for UVM email address: firstname.lastname@uvm.edu.

Buying a computer

Most students use their own computers—and many see benefits in buying them from UVM's not-for-profit Micro-computer Services Depot. The Depot offers a variety of Apple and Dell systems and accessories at competitive education prices.

Why buy at the UVM Depot?

- We're devoted exclusively to the needs of students, faculty and staff; we specialize in what you need
- We offer competitive education pricing
- Our computers come all set up to work on the campus network, and include virus protection
- We have an on-campus showroom and repair facility
The Depot, located at 211 Waterman, is open Monday through Friday, 9:00 a.m. to 4:30 p.m. Stop by, call (802) 656-3067, send email to depot@uvm.edu, or visit www.uvm.edu/cit/mcsv

Connecting to the Internet

You can connect to the Internet using the port in your room and at other sites on campus. Or, go wireless in the Library, Billings Student Center, many residence halls, and at other locations listed at: www.uvm.edu/cit/wireless

Computing labs on campus

You'll have access to hundreds of Windows and Macintosh computers around campus. Here's a sampling of sites:

- Bailey/Howe Library
- The Cyber Cafe

Academic Support Programs offer a range of services to support students' academic success, including study skills and subject-area tutoring with emphasis on introductory courses and writing assistance in any discipline. Supplemental Instruction (SI) assists students in large lecture courses. In SI sessions, small groups of students meet after class to review course material and learn how to apply study skills to specify subjects.

Any student currently enrolled in classes at UVM is eligible to use Academic Support Program services. The office is centrally located at 244 Commons, Living/Learning Center. For more information, stop by or call the office at (802) 656-4075. The extended office hours are Monday to Thursday 8 a.m. to 9 p.m.; Friday 8 a.m. to 5 p.m.; Sunday 6 p.m. to 9 p.m.

TRIO Program TRIO includes two projects dedicated to the educational and cultural advancement of its participants:

Student Support Services provides academic support to 225 UVM undergraduate students through the above Co-op programs and through classes, mentoring, laptop lending and graduate school programs and more.

Upward Bound provides academic and cultural support to 60 Vermont high school students. Participants in the TRIO projects must be first generation college students; have limited income; and/or (for Project STAY) have a documented disability.

Services For Students With Disabilities

ACCESS, A170, Living/Learning Center
656-7753, FAX: 656-0739 Email: access@uvm.edu
On the web: www.uvm.edu/access

Services and accommodations for students with disabilities are coordinated by ACCESS, located in A170 Living/Learning Center. ACCESS works with students in all academic programs, with all types of disabilities: physical, learning, visual, hearing, systemic, and psychiatric, as well as attention deficit disorders, acquired brain injuries, and other disabilities. Services are free of charge, voluntary, and confidential. Students are encouraged to contact ACCESS well in advance of when services and accommodations are needed. Current and comprehensive disability documentation will be required; for further information on eligibility, please see the ACCESS web site: www.uvm.edu/access; see www.uvm.edu/~dosa/handbook for policies and procedures regarding students with disabilities.

Career Services provides UVM students with assistance in exploring and implementing their career goals. There are four major components in this effort: understanding one's own strengths and career needs, discovering related work and educational options, validating those options through related experience, and pursuing specific post-graduate goals. The Career Services Office is located in E Building, Living/Learning; the web address is <http://career.uvm.edu>.

Career Assessment Students often want assistance in identifying their strengths and career needs, and in discovering the best major for them or the kind of employers and openings that might be good options. *Career Counselors* administer assessment tools, lead workshops and meet individually with students to help them set goals related to career, graduate school or even undergraduate major interests. To see a career counselor, call ahead on the day you wish to stop by with quick questions for a *Same-Day Consultation* (M-F 1:30-4:30 p.m. and Wednesdays 5-7 p.m. during Fall and Spring semesters) or plan ahead for an *hour-long Career Counseling Appointment*.

Career Resources Surveys of UVM graduates, publications on careers related to certain majors, and books on careers in specific interest areas (such as environment, media, sports, human services, health) are available in the Career Library in Living/Learning. Every year, students can attend workshops and panels, presented by UVM grads, discussing options for students in any number of majors. At Career Services you will also find contact names of over 800 participants in UVM Career Connections, a network of UVM alumni who have volunteered to provide information to students interested in working in their fields or geographic locations.

Get Experience At UVM, we want all students to test their interests in particular fields by getting experience before they graduate. Because employers are expressing interest in hiring college graduates who have relevant work skills, there is even more reason to get experience before finishing a baccalaureate degree. To support students' needs in this area, many campus leadership and research opportunities are available. Career Services has also developed a number of useful programs and services.

Federal Work Study job openings are managed through Career Service. Students who have received a Work-Study award through the Office of Financial Aid can use their employment to gain valuable skills and test their career

Multicultural Programs

The Diversity & equity Unit at the University of Vermont, headed by the Senior Advisor to the President, is comprised of four departments:

- The ALANA Student Center

- The Center for Cultural Pluralism

- The Office of Lesbian, Gay, Bisexual, Transgender, Ques

and to get significantly involved in the University and local community.

Leadership Programs engage students in experiential leadership education. Central programs include leadership classes (EDHI 213 and 214), the Emerging Leaders Program, Women as Leaders Workshops Series, Leadership Recognition, KUDOS! Leadership TREK, and campus-wide leadership retreats.

Greek Life Fraternity and sorority life is an important option for many UVM students. This area of endeavor supports the activities of the Interfraternity Council, the Panhellenic Council, Order of Omega (the Greek academic honor society), the Greek Judicial Board, individual chapters, the Greek Alumni Advisory Council, and the Fraternity Manager's Association. Currently there are 10 fraternities and five sororities.

Community Service and Volunteer Programs The spirit of community service is an integral part of campus life for many UVM students, faculty, and staff. This area includes Community Service TREK (for new students), the broad-ranging efforts of Volunteers in Action (VIA – a consortium of 13 individual community service programs), Hearts and Hands, Alternative Spring Break, Make a Difference Day, Community Serv-a-thon, Community Works and many other links with the local community.

Outdoor Programs Vermont provides a wonderful classroom for students interested in enhancing their outdoor

tions, and a medical history. A physical exam is not required.

Health Insurance The University makes available to students an optional health insurance plan that provides hospitalization and some outpatient benefits. Full-time students who do not provide proof of adequate health insurance at the time of registration will be required to purchase the University-sponsored plan.

The Burlington area has a large and sophisticated medical community of which the Center for Health and Wellbeing is a part. Students requiring consultations are referred to specialists in the area. When necessary, hospitalization is usually arranged at Fletcher Allen Health Care, a teaching hospital located on the edge of the main campus.

Housing

The mission of the Department of Residential Life is to create an atmosphere within the University of Vermont residential system that facilitates the growth and development of all students. This includes providing a safe and secure environment that fosters healthy, inclusive community building among all residents while supporting and emphasizing academic success. We are committed to and intentional about providing students a range of experiences within their living environment. Desired outcomes of these experiences include:

- The development of a sense of belonging.
- The acquisition of knowledge and skills.
- The development of critical thinking skills.
- The ability to make ethical choices.
- The assumption of self responsibility.

The residence halls house approximately 4,500 students on four residential campuses: Athletic, Central, North, and Redstone. Halls are predominately traditional hallway and suite style housing, consisting mostly of double and single rooms. Each campus offers special housing options, from academically-based residential learning communities such as Global Village and Environmental Greenhouse to interest-based floors such as Outdoor Experience and Quiet Lifestyle.

Each residence hall complex has a service desk where students can pick up their mail, check out recreational equipment, and get information. Professional staff and/or student staff are on call 7 days a week for general assistance as well as to respond to emergencies.

All complexes also offer study space, lounges, laundry facilities, and kitchenettes.

Student Rooms: Each student room is equipped for comfortable residence hall living. Double rooms have two beds, two desks and chairs, bureau space for each student, two

closets, and blinds or shades on the windows. Bookshelves are provided in some rooms. Students provide their personal amenities. All student rooms are wired for access to the Internet and UVM's campus cable television system. There is no connection fee for either service.

Undergraduate Housing: All first-time, first-year students are required to live on-campus for four matriculated semesters. Information on exceptions to the on-campus residency requirement is available at reslife.uvm.edu. Housing for returning students is determined by a lottery held each spring.

Students living in the residence halls are required to have a room and meal plan contract. In August, new students will receive notification of their housing assignments. Rooms may not be occupied until the date specified. Students are expected to leave the residence halls no later than 24 hours after their last examination or by 8:00 p.m. on the last day of final examinations.

Apartments and Family Housing: Housing for graduate and non-traditional students is available at Fort Ethan Allen, located a few miles from campus in Winooski, Vermont. The 115 one, two, and three bedroom apartments are close to UVM, shopping, hospitals, and educational institutions. Please visit the Residential Life website at reslife.uvm.edu for detailed information on Apartment and Family Housing.

The Department of Residential Life is located in Robinson Hall on Redstone Campus. Please peruse our website at reslife.uvm.edu for complete information on housing.

The Inter-Residence Association represents students living in UVM residence halls. The council, with its executive board and representation from each residence complex and ongoing committees, offers programs and services and provides leadership for residence hall students. The Association represents residential student interests to other constituencies within the University community and the greater Burlington area.

Veterans Educational Benefits

The University provides support and information to any veteran or dependent eligible for benefits under Federal Law, Chapters 30, 31, 32, 34, 35, or 106. Students eligible for these benefits should contact the Registrar's Office at least one month prior to registration each semester. Students wishing to register for benefits should be prepared to present their certificates of eligibility.

Students involved in the Veterans Program should contact the University in the event of any change in credit load, dependency status, address, or major. The phone number is (802) 656-2045.

Academic and General Information

Academic Advising is a process in which students seek and receive guidance with academic program planning, usually from a faculty advisor. Meaningful educational planning is compatible with a student's life goals, therefore academic advising encompasses discussion of life goals and assistance with the developmental process of life goals clarification. The ultimate responsibility for making decisions about educational plans and life goals rests with the individual student. Assistance with the clarification of life goals is not limited to the academic advising relationship, and may include staff in areas such as career development, residential life, and counseling. For academic advisors, assisting students in the clarification of life goals means helping students explore and define their educational and career goals in an atmosphere of mutual respect and learning. Advising, while non-prescriptive, encourages students to think critically, seek out resources, and develop action steps. The desired result is that students will feel a sense of connection with the advisor and a sense of guidance, while realizing personal responsibility for exploring options and making decisions.

Academic Advisors remain alert to any barriers to student academic performance and guide students to address these appropriately. The advisor needs to be able to refer student to appropriate academic and support services to enhance both their student experience and their academic success. Faculty advisors are expected to initiate contact with each advisee during a student's first two semesters on campus and when a new advisee is assigned to the advisor (includes newly declared majors and transfer students). After the first two semesters, maintaining regular contact with the advisor is the responsibility of the advisee. The advisor will be prepared to meet with and listen to his/her advisees on a regular basis. Advisor and advisee share responsibility equally for the success of the advising relationship.

Advising Resources

In addition to an assigned faculty advisor, a variety of other advising resources are available to undergraduates:

The Learning Cooperative represents a collaborative effort on the part of academic and student affairs offices to improve the ability of students to benefit fully from their academic experiences. The Learning Coop supplements the academic environment by providing developmental instruction in writing, reading, and study skills, works with students to develop good learning strategies for challenging courses, and maintains a campus-wide tutoring program.

Prehealth Advising assists undergraduate students with the admissions requirements for dental and medical school. A library of resource materials is maintained which includes literature on alternative health careers, school catalogues, and premedical education journals.

Preveterinary Advising is available to discuss plans for graduate school and employment in animal science career areas. A selection of catalogues, pamphlets, and other related literature is maintained.

International Student Advising is provided through the Office of International Education to assist international students with personal and academic problems, as well as

matters relating to immigration and social and cultural adjustment. A special orientation program, prior to the beginning of each semester, provides new international students with an introduction to the University and the Burlington community. An active campus International Club provides an opportunity for international students to contribute to campus life and to make friends outside the classroom. Students planning to study abroad should also consult the Office of International Education which is located at B162, Living/Learning Center.

Multicultural Student Advising at the ALANA Student Center provides broad based support aimed at ensuring the success of Multicultural students at UVM. Services include: academic advising; linking students to resources and opportunities on campus; tutoring; peer mentoring; social and cultural networking. Students may elect to take part in The Summer Enrichment Scholarship Program. A pre-first year opportunity that offers an academic experience (6 credits) and provides an introduction to campus and college life before the official start of the school year.

Prelaw Advising is provided through both Career Services and faculty and staff pre-law advisors in the College of Arts & Sciences. Career Services also sponsors workshops, panel discussions and visiting law school representatives. More information regarding pre-law advising can be found at: <http://www.uvm.edu/~career/>

Career Services assists students who are exploring academic majors, internships, work-study positions, full and part-time work opportunities and future career options. Advising is provided as early as first semester and is offered throughout a student's academic career at UVM.

Degree Students

Students who have presented appropriate credentials for admission and have been accepted as students in a degree program. The following four actions apply only to degree students.

Intercollege Transfers Degree students may transfer to another college/school within the University. To do so, a student must complete a Change of Major/College form and obtain the approval of the deans of the two units involved. Students wishing to transfer must have a cumulative GPA of 2.0. A cumulative GPA of 2.5 is required for transfer admission into teacher licensure programs in the College of Educa-

to their dean to request readmission. Students must apply for readmission by October 31 or March 31 preceding the appropriate semester of return.

Withdrawal from the University Degree students who wish to withdraw from the University must first notify their academic dean in person or writing.

Leave of Absence A leave of absence means that a student in good standing, who is eligible for continued enrollment, ceases to be enrolled and is guaranteed readmission.

1. Students submit a written application for a leave of absence to their college/school prior to the beginning of the semester that the leave will take effect. To be confirmed, leave forms must be signed by both the student and their dean.
2. Leaves are granted for a finite period of time, and normally may not exceed four semesters. A leave normally may not be granted to students on academic trial or disciplinary probation.
3. While on leave, the students status is temporarily inactivated. A leave of absence guarantees an individuals readmission only if the student confirms intent to return by the closing date for a normal readmission application (October 31 and March 31 preceding the appropriate semester). A leave does not

Retroactive Academic Adjustment

The University will consider requests for late withdrawal and retroactive academic adjustments when those requests are accompanied by appropriate information. To receive consideration, a student or his/her authorized representative must submit to his/her dean's office a completed Consultation Form for Medical Withdrawal and Incompletes. Forms are available in deans' offices.

Students may appeal the academic adjustment decision of their school or college to the Provost's Office. If the appeal is based upon a certified disability and recommended as an appropriate accommodation, students may appeal the academic adjustment decision of their school or college as outlined in Policies and Procedures for Students with Disabilities under the section entitled "Protocol for Dispute Resolution." All appeals must be submitted in writing.

Decisions regarding adjustments to academic records are distinct and separate from refunds. Any refund, including tuition, financial aid awards, fees, room, and board, will follow federal and institutional guidelines. The effective date for any refund will be the date that the completed form was received by the academic dean's office. Questions regarding refunds should be directed to the Student Financial Services.

Independent Study Courses

Independent study is a course taken for credit, which is tailored to fit the interests of a specific student, and which occurs outside the traditional "classroom/laboratory setting."

Independent study is carried out under the direct supervision of a faculty member having expertise in a particular area of investigation. Consequently the project will be done in the department primarily responsible for the field of study. Prior to enrollment in independent study, students must obtain the approval of their advisor, faculty sponsor, and the faculty sponsor's department chairperson.

Independent study may be taken for variable credit. The amount of credit to be granted should be mutually agreed upon by the student and the faculty sponsor prior to registration. When a project is to cover more than one term, the designation XC (extended course), rather than incomplete, should be used on the final grade sheet for the first term of work.

Academic units offering independent study will be responsible for administering such work. Specific guidelines, which define the responsibilities of both faculty and student for administering the independent study, are noted below. Alternative guidelines that incorporate these basic points are acceptable.

Guidelines:

- a. The success of an independent study project is often related to the amount of advance planning expended on the project. Consequently, planning for the project should, whenever possible, be initiated in the semester before the course is taken.
- b. By the end of the add/drop period, students will be required to submit to their faculty sponsor a specific plan which must include, but not be limited to, the following:
 - i. The project title.
 - ii. A statement of justification, indicating why independent study is being selected and the reason for undertaking the project, its importance, and how it relates to other work done by the student.
 - iii. A clear and complete statement of project objectives.
 - iv. A concise statement of the plans and methods to be used in order to accomplish each objective.
- c. During the first full week of classes the student and the

faculty sponsor will meet and prepare a document which includes the following:

- i. A schedule of dates when the student and faculty member will meet and discuss progress, including a time plan indicating when various parts of the work are projected for completion.
- ii. A list of those ways in which documentation of work can be shown.
- iii. A plan for evaluation, which will include the specific work to be submitted for evaluation on the project, and a statement of criteria to be used for evaluation, will also be included.
- d. It is the responsibility of the faculty supervisor to ensure that all the provisions outlined above have been satisfactorily accomplished. Copies of all documents and schedules mentioned must be filed with the department chairperson by the end of the add/drop period. Faculty sponsors should retain the completed projects, along with faculty evaluations, for review, if necessary, by appropriate school/college committees.

Undergraduate Enrollment for Graduate Credit

Senior undergraduates may enroll for up to six graduate credit hours at UVM under the following circumstances:

iT

important commitments of the students concerned. Faculty members must be prepared to give a make-up test for those unable to be present at the time set.

4. University academic responsibilities have priority over other campus events. Attendance at (1) regularly scheduled classes have priority over specially scheduled common hour examinations, (2) common hour examinations have priority over attendance at other activities.
1. The examination period at the end of each semester is set by the official University calendar.
2. Final examinations shall be given only during the regular examination period except by permission of the dean of the college/school on request of the chairperson of the department. No examination (regular or final) shall be given during the last week (the last five instructional days) of the semester except lab exams given in courses with specific lab sections.
3. The time and place of each final examination are determined by the Registrar and a schedule is circulated and posted. Any change in the scheduled time or place may be requested by the chairperson of the department concerned when conditions seem to warrant such special arrangement. Decision on such requests rests with the Registrar.
4. In every course in which a final examination is given, every student shall take the examination unless excused by the instructor.
5. Students having a conflict in their final examination schedule must notify the faculty concerned of such conflict not later than the close of business one week prior to the last day of classes for the semester in which the conflict arises.
6. Students who are absent from a final examination for any reason must report that fact and the reason, in person or in writing, to their instructor within 24 hours. If the absence is due to any situation beyond the reasonable control of the student (e.g. illness or family tragedy), the instructor must provide the student with the opportunity to complete the course requirements. At the instructor's discretion, this may be an examination or some other suitable project. The instructor may require evidence in support of the student's reason for absence.
7. If the absence is not reported as provided above, or is not excused by the instructor, the examination is regarded as failed.
8. No student shall be required to take three or more final examinations in one 24-hour period.
9. Unless a mutually agreeable alternative time can be reached by the student and the instructor, the scheduled make-up will occur the next day after the regularly scheduled examination. These considerations are subject to the following constraints: all exams will be given in the final exam period and all conflicts must be resolved before the start of the final exam period.
10. Students will select which of the three examinations they wish to take at an alternative time. In cases where the instructors in all three sections feel it is impossible to give the examination at an alternative time, and all conflicts are in the same academic unit, the appropriate dean's office, in consultation with the faculty involved, will establish which of the three examinations will be taken as a make-up. If the unresolved conflict involves more than one college, the deans of the units in question will resolve the matter. If the deans involved

outstanding requirements.

- (1) Students, having been dismissed for low scholarship, are placed “on trial” upon readmission.
- (2) Students may be placed “on trial” if in any semester they have failed one-half or more of their semester hours, but have been permitted to continue in college/school.
- (3) Students whose records have been consistently below the graduating average or generally unsatisfactory in any semester may be placed “on trial” or continued “on trial” even though they do not come within the provisions that apply to “Separation.”

Separation: Students are dismissed from UVM if they receive grades below passing in one-half or more of their semester hours in any semester, unless they are allowed to continue by action of the designated committee.

Students who fail to meet the condition of their trial or whose record has been unsatisfactory and consistently below the graduation average may be dismissed for low scholarship even though they do not come within the “On Trial” provisions.

Students dismissed for low scholarship must address their application for readmission to their college/school and receive written approval from their dean before enrolling in any University course.

Student dismissed for disciplinary reasons must receive written approval from the Vice President for Student Affairs before enrolling in any University course.

Transcripts

An official transcript is the reproduction of a complete, unabridged permanent academic record validated with the University seal, facsimile signature of the Registrar, and date of issue. A rank-in-class entry is made upon completion of undergraduate degree requirements.

Students and alums may obtain an official transcript of their permanent academic record by writing the Office of the Registrar, 360 Waterman Building. Please allow a minimum of one week for normal processing and three weeks following the end of a semester. Transcripts are not released when there is indebtedness to the University.

Transfer of Credit

Students seeking to transfer academic credit may do so only for courses that are taken at accredited institutions and are comparable in content, nature, and intensity to courses taught at The University of Vermont. Credit is not given for transfer courses with grades lower than C. To insure transferability of courses to be taken elsewhere, degree students must secure prior approval for each course in writing from Transfer Affairs. Questions regarding credit transfer should be directed to the Office of Transfer Affairs, 339 Waterman.

Credit by Examination

A degree student may, under the following conditions, receive credit for a course by taking a special examination and paying the special examination fee charge of \$50 per credit hour. The examination fee must be paid prior to taking the examination.

A request for such an examination must be made in writing at least one month before the date of the examination, and it must be approved by the student’s advisor, the chairperson of the department in which the course is given, and the dean, in that order. The student must neither have audited, previously received a grade or mark, nor have attempted a prior special examination in this course at UVM or at any other institution

of higher education. Only specific University courses may be challenged using special examination. Readings and Research, Honors Research, etc., are specifically excluded. Special Topics may be challenged only if that course is offered during the semester in which the special examination is being requested. The student may not take a special examination in a course whose content is presupposed by other courses the student is currently enrolled in or has already taken. In cases of uncertainty, the department chairperson shall decide whether it is appropriate for the student to take a special examination for credit in a particular course. Upon passing the special examination, as determined by the examiner and the chairperson of the department in which the course is given, the student receives credit, but not a grade, for the course. Credit by examination forms are available in the Student Service Center, Third Floor of the Waterman Building.

College-Level Examination Program (CLEP)

The University considers credit for most of the 30 specific subject CLEP exams providing the student has not previously attempted a similar course of study at a college level. Scores acceptable for credit are comparable to attaining a level of accomplishment equal to a B in a graded course situation. Individual exams may earn a student three, six, or eight semester hours of credit depending on the nature and scope of the material covered. Credit is not granted for the general exams.

Credit granted for CLEP Examinations may be applied toward distribution requirements and to the total semester hours specified for a particular degree program when approved by the dean of the college/school in which the student is subsequently a candidate for a degree. Information about CLEP is available at the Office of Transfer Affairs, 339 Waterman Building.

Crtoward diduamph. Tc .atu

b

Credit for Military Service

University of Vermont degree students may have their military service record reviewed for possible transfer credit. Veterans should present form DD 214 to the Office of Transfer Affairs; active duty personnel should have form DD 295 sent directly from the educational officer on the base. Army personnel seeking credit other than Physical Education

has notified the instructor and has been excused. To disenroll students the instructor must notify the Registrar, who will remove the student's name from the class list and the course from the student's schedule. The student is responsible to determine whether or not she or he is enrolled in a class.

*When a student is unable to attend class for a health reason, the student may give permission for the instructor to discuss the situation with a representative from the Center for Health and Wellbeing. As with all absences, the faculty member has final authority to excuse students from classes.

Athletic-Academic Conflicts Students participating in inter-collegiate athletics should plan their schedules with special care, recognizing the primary importance of all of their University academic responsibilities. Each semester, members of UVM varsity and junior varsity teams are responsible for documenting in writing any conflicts between their planned athletic schedule and the class schedule to their instructors by the end of the second full week of classes. Students and instructors should then discuss potential conflicts between course requirements and intercollegiate competitions. When an unavoidable conflict exists, the student and instructor should seek a resolution which permits the student to address the course requirement and participate in the athletic competition. The instructor has final authority on this matter.

Religious Holidays Students have the right to practice the religion of their choice. Each semester students should submit in writing to their instructors by the end of the second full week of classes their documented religious holiday schedule for the semester. Faculty must permit students who miss work for the purpose of religious observance to make up this work.

Freedom of Expression and Dissent

The University of Vermont is a place to learn and to teach. It is not a cloister--it does not live in a vacuum. It is both in the world and of the world. Its mission is to educate people for leadership in society.--Board of Trustees, May 1969.

As the above quotation suggests, the University functions within the rules governing a larger society. It was created by that society for a special purpose: the facilitation of learning and teaching. It follows that the University's regulations must conform with the law as well as take account of the particular role of educational institutions. Fundamental to our entire philosophy is our firm belief that rights guaranteed by the First and Fourteenth Amendments to the Constitution of the United States must be protected on the campus as elsewhere and that local, state, and federal laws must prevail on the campus. Becoming a member of the University community in no way abrogates or compromises the rights which the Constitution of the United States guarantees to all persons. This principle applies to the adjudication of violations of campus policies as well as other areas.

Within the University setting as within society at large, the exercise of one's rights must be tempered by recognition of the rights of others. For example, the exercise of free speech may unreasonably infringe upon the right to learn. It should not be surprising that conflict may arise between parties engaged in activities which are individually lawful, for a fundamental function of social organization is the reconciliation of competing interests.

Within the University setting more than any other, the appropriate means for conflict resolution is rational discourse. The process fundamental to the existence of the University cannot be abandoned under stress, especially since they represent the most effective means for progress. Further, the criteria employed to seek lawful accommodation of various interests must grant special attention to the central mission of the University: learning and teaching.

The laws of society and the mission of the University establish the framework within which disagreement, dissent, demonstration, and advocacy may, and indeed must, occur. For humankind to progress, the educational process must be dynamic even if fraught with controversy, for change cannot take place until the first question is raised. The discovery of new propositions or new solutions also may be followed by passionate advocacy. Such advocacy must never replace the continued pursuit of the University's essential purpose of learning and teaching.

It is within this context that the University rejects the use of, or the threat of, force as a means of resolving differences. Violence is both unnecessary and inappropriate for those who have access to reasoned discourse and is unacceptable within an institution dedicated to reason.

The University officer responsible for implementing the Policy Statement on Freedom of Expression and Dissent, when students are involved, is the Chief Student Affairs Officer. The University's commitment to the protection of the rights of its students is a fundamental principle of its mission.

A full statement of the policy can be found in *The Cat's Tale*, online at www.uvm.edu/~dosa/handbook. Each student is responsible for knowing and observing this policy.

education records, except to the extent that FERPA authorizes disclosure without consent. One exception which permits disclosure without consent is disclosure to school officials with legitimate educational interests. A school official is a person employed by the

Many courses involve instruction in and the use of various types of power equipment, laboratory apparatus, and specialized facilities. The University takes every precaution to provide competent instruction and supervision of such courses. It is expected that students will cooperate by following instructions and exercising precaution. In case an accident resulting in personal injury does occur, the University can assume no responsibility.

Notification of Rights Under FERPA for Post-Secondary Institutions

The Family Educational Rights and Privacy Act (FERPA) affords students certain rights with respect to their education records. These rights include:

1. The right to inspect and review the student's education records within 45 days of the day the University receives a request for access. Students should submit to the registrar, dean, head of the academic department, or other appropriate official, written requests that identify the record(s) they wish to inspect. The University official will make arrangements for access and notify the student of the time and place where the records may be inspected. If the records are not maintained by the University official to whom the request was submitted, that official shall advise the student of the correct official to whom the request should be addressed.
2. The right to request the amendment of the student's education records that the student believes are inaccurate or misleading. Students may ask the University to amend a record that they believe is inaccurate or misleading. They should write the University official responsible for the record, clearly identify the part of the record they want changed, and specify why it is inaccurate or misleading. If the University decides not to amend the record as requested by the student, the University will notify the student of the decision and advise the student of his or her right to a hearing regarding the request for amendment. Additional information regarding the hearing procedures will be provided to the student when notified of the right to a hearing.
3. The right to consent to disclosures of personally identifiable information contained in the student's

Academic Options

In addition to the areas of study detailed in the following sections of the catalogue, a number of curricular options are available which provide unique opportunities for UVM students. Students interested in a curriculum focusing on the environment and environmental problems will be interested in the options described in the following section "Studying the Environment."

UVM Study Abroad

The Office of International Education (OIE), located in B162 of the Living/Learning Center, is an advising and resource center for students interested in a year, semester, or summer study abroad experience. Study Abroad Advisors maintain extensive information about study abroad programs, institutions, and volunteer opportunities. They, in conjunction with the academic advisor and the Office of Transfer Affairs, help students identify programs appropriate to their needs and arrange credit approval from UVM. All students intending to study abroad and receive transfer credit from UVM are required to visit the OIE and to complete the Study Abroad Approval Form prior to departure. Contact the OIE for deadlines. Official approval is required for students to be guaranteed that their programs of study are eligible for transfer credit and that any financial aid will apply. There is a \$400 study abroad fee for semester and year-long programs and a \$200 fee for summer programs.

To be approved to study abroad, students must:

1. Have completed two semesters at UVM or sophomore standing.
2. Have completed 2 semesters at UVM or sophomore standing.
3. Have a minimum cumulative GPA of 2.5, or between 2.0 and 2.5 with a minimum semester average of 2.5 for each of the last two semesters prior to studying abroad.
4. Meet the admissions criteria of a University approved study abroad program. University approved programs include those programs on the UVM Approved List.

Students with a GPA above 2.0 who do not qualify under point two above may petition their academic dean for permission to study abroad. Students seeking such permission should request an Academic Eligibility Form from their Study Abroad Advisor in the Office of International Education to be signed by their academic dean.

Students who have been dismissed or are on academic trial are generally not eligible to participate in study abroad programs. Under no circumstances will a student on disciplinary suspension the semester before studying abroad, and/or the semester they are scheduled to study abroad, receive official UVM approval for overseas study.

For more information about eligibility requirements for study abroad, visit the Office of International Education Web site at: www.uvm.edu/~oies.

UVM participates in a number of exchange programs with institutions around the world. In an exchange program, all UVM students exchange places with a student from a foreign institution. Exchange programs are a good financial value. These programs provide direct immersion into the academics and culture of the country. Although most exchange pro-

grams require a good command of the host language, many offer programs entirely in English. Students qualifying for tuition remission may also use that assistance to refund a portion of their exchange programs costs. The host institution issues a transcript at the end of the program to enable students to receive transfer credit.

UVM/University of Western Australia Exchange Program

This program in Perth, Australia, was developed by UVM's Rubenstein School of Environment and Natural Resources (RSENR), and RSENR students will receive priority placement to pursue their studies in natural resources. Courses are also offered in business, arts and sciences, agriculture, Asian studies, and Aboriginal studies. For more information, contact the OIE.

UVM/University of Belgrano Exchange Program

This program in Buenos Aires, Argentina can accommodate various levels of non-native Spanish speakers and students can choose courses in Spanish language and literature, culture, history, economics, and politics. For more information, contact the OIE.

UVM/University of Lapland Exchange Program

This exchange program in Finland is designed especially for Social Work majors and offers UVM students the opportunity to study social work in English. For more information, contact the OIE.

UVM/Sussex Exchange Program

This exchange is located at the University of Sussex in Brighton, England. Sussex is well recognized for both its humanities and social science offerings as well as its science and engineering programs. Twenty percent of the Sussex student body is international. For more information, contact the OIE.

developed by UVM's School of Nursing. This provides opportunity for nursing students to take classes in their major overseas. For more information, contact School of Nursing, or the OIE.

UVM/Stockholm Exchange Program

This exchange program with the Stockholm Institute of Education, Stockholm, Sweden, provides opportunities for preK-3 education students to study for the spring semester. For more information, contact College of Education and Social Services, or the OIE.

cially popular among faculty, staff, and students. For a complete Approved List, contact the Office of International Education, or refer to the Office of International Education Web site .

American Institute for Foreign Study (AIFS)

A publicly owned company, AIFS Inc. is a nationwide organization that provides comprehensive overseas study and travel programs in Argentina, Australia, Austria, the Czech Republic, England, France, Holland, Ireland, Italy, Japan, the Netherlands, Russia, South Africa, and Spain.

Boston University

Boston University offers academic-year, semester, and summer study abroad opportunities in 13 countries on six continents. Several of the program sites provide students with an integrated internship component for a portion of their academic experience and credit. Other program sites feature direct enrollment options in local universities for advanced language students.

Institute for the International Education of Students

This nonprofit organization sponsors programs in Argentina, Australia, Austria, China, England, France, Germany, Ireland, Italy, Japan, and Spain. Semester, year, and summer options are available.

School for Inter

graduate programs in Animal and Food Sciences, Biology, Biomedical Technology, Biostatistics, Computer Science, Education (Curriculum and Instruction and Professional Education), History, Materials Science, Mathematics, Mechanical Engineering, Microbiology and Molecular Genetics, Nursing, Public Administration, and Statistics. The AMP allows early admission to graduate studies with up to six concurrent credits double-counted toward the bachelor's and master's degrees.

- **3+3 Veterinary Medicine Program** Students receive a combined BS/DVM from UVM's College of Agriculture and Life Sciences and Tufts University. Students apply during their application for undergraduate admission to UVM.

- **Accelerated Licensure /Master's in Secondary Education** Education students apply during their junior year at UVM.

- **3+3 BS/MPT Physical Therapy Program** Students may apply at the time they submit their undergraduate application to UVM, or students in the following categories may apply during their junior year: any arts and sciences major; nutritional science majors; biological science majors.

- **4+1 MBA Program** Available to business majors and business minors. Students apply in their junior year.

Consult the Graduate College catalogue or appropriate dean's office for information about these or other accelerated degree programs.

Scholarships: Two-, three-, and four-year Army ROTC Scholarships paying full tuition, full fees, and \$900 a year for

Undergraduate Research

Undergraduate students assist faculty in research in a broad range of fields. Several programs provide research grants for undergraduate students. Notable examples include the HELiX (Hughes Endeavor for Life Science Excellence) and URECA (Undergraduate Research Endeavor Competitive Awards) programs. Students are encouraged to consult their dean's office or faculty advisor(s) regarding these and other research opportunities.

Military Studies

Army Reserve Officer's Training Corps (ROTC) Program

The Army ROTC program offers men and women the opportunity to develop leadership and management skills that lead to an officer commission as a second lieutenant in the United States Army, Army Reserve, or Army National Guard. Instruction focuses on leadership, problem-solving, decision-making, ethics, and military doctrine.

Department Course Offerings The four-year Military Studies program at UVM consists of a two-year Basic Course (first-year and sophomore year) and a two-year Advanced Course (junior and senior year). Attending the 30-day Leader's Training Course (LTC) after the sophomore year replaces the Basic Course.

Interdepartmental Course Offerings The Military Studies Department also offers one-credit courses in related fields on behalf of the UVM Department of Physical Education including: PEAC Course 014 – Orienteering, Course 017 – Military Fitness, and Course 019 – Backpacking. Students do not need to participate in ROTC to take these courses. These PEAC courses incur no military obligation.

Army ROTC Scholarships and Financial Aid

college and college students, pre-graduate/pre-professional students, and working professionals who are all interested in gaining credits on an official UVM transcript. Individuals aged 65 + and are Vermont residents may attend tuition free. Such credits may be applied to UVM undergraduate and graduate programs and are often used in preparation for advanced and professional studies. Additionally, many students enroll in credit courses for personal enrichment as well as for professional certification and career advancement.

The following college credit certificates, course sequences, and programs are available through Continuing Education:

***Accounting Sequence** – Individuals interested in preparing for the CPA exam are encouraged to inquire about the availability of required accounting courses. Students who have a bachelor's degree but lack specific accounting courses may enroll through Continuing Education.

***Bridge Plan in Engineering** – Through this program, engineers who possess an associates degree in engineering are able to enroll in a set of required courses and transition directly into a bachelor's degree program offered by the College of Engineering & Mathematical Sciences. Students may enroll through Continuing Education and continue on in their degree program as part-time or full-time students.

***Computer Software Certificate** – This certificate program attracts individuals who are interested in gaining the knowledge necessary to change their career, advance their professional credentials, or prepare for entrance in the graduate computer science program.

***Complementary Healthcare Sequence** - Individuals who are interested in gaining more knowledge about the art and science of complementary healthcare are encouraged to enroll in this dynamic sequence of courses. Students may choose to enroll for college credit or participate for non-credit/professional credit.

***Ecological Economics Certificate** – The Gund Institute for Ecological Economics offers non-degree students an opportunity to enroll in a solution-oriented learning experience. Professionals and others may enroll in this certificate through Continuing Education.

***Educational Technology Online Sequence** – This 18 credit hour online sequence of credit courses leads to a broad understanding of the role of technology in learning and instruction. For educators who are already certified, the six basic courses will provide competencies leading to endorsement.

***Faculty Lead Programs Abroad**

One of the distinctive features of UVM is its focus on studying the environment and environmental problems. Students interested in these issues have a rich array of choices. Many of these are within specific disciplines, but others offer the opportunity for multidisciplinary study. UVM has several multidisciplinary degree programs.

Environmental Studies is a curriculum available to students from four different colleges and schools (Agriculture and Life Sciences, Arts and Sciences, Education and Social Services, and Environment and Natural Resources) and is coordinated within the Environmental Program.

An **Environmental Sciences** major is jointly offered by the College of Agriculture and Life Sciences, the College of Arts and Sciences, and The Rubenstein School of Environment and Natural Resources, with emphases in agriculture and the environment, conservation biology and biodiversity, ecological design, environmental analysis and assessment, environmental biology, environmental chemistry, environmental geology, environmental resources, and water resources.

MINOR IN ENVIRONMENTAL STUDIES For students in several colleges and schools, this program combines the basic interdisciplinary skills and perspectives necessary for the understanding of environmental issues with the curriculum of a traditional disciplinary major.

In addition to two introductory Environmental Studies courses and at least three intermediate or advanced ENVS courses, students complete a major in a related discipline or professional field.

Students in the College of Arts and Sciences may elect this minor to fulfill the minor requirements in that college. Minor programs are available on an elective basis in most other schools and colleges.

Consult appropriate sections of this catalogue for the exact requirements.

- ***Agriculture and the Environment*** (14 credits) – impacts of agriculture on the environment and strategies for minimizing environmental degradation.
- ***Conservation Biology and Biodiversity*** (14 credits) – endangered species and ecosystems, and strategies for conserving the diversity of the earth's life forms.
- ***Ecological Design*** (14 credits) – use of ecological systems to improve environmental quality.
- ***Environmental Analysis and Assessment*** (14 credits) – techniques for measuring environmental impacts and managing environmental data.
- ***Environmental Biology*** (16 credits) – ecological and molecular analysis of endangered populations, phenomena affecting biological diversity, the interrelationship of organisms and their environments, and conservation genetics.
- ***Environmental Chemistry*** (17 credits) – analytical methods for measuring and monitoring air, ground, and water pollutants.
- ***Environmental Geology*** (16 credits) – earth science, geomorphology, and the analysis of ground water.
- ***Environmental Resources*** (14 credits) – environmental processes in air, soil, and water.
- ***Water Resources*** (14 credits) – effects of pollutants on the structure and function of aquatic ecosystems.

D. Prerequisites and Corequisite courses (22-32 credits)

- BCOR 11/12
- MATH 19/20 or 21/22
- CHEM 31/32 or 35/36
- PHYS 11/12 or 31/42 – *Chemistry Focus Track only*

Environmental Engineering

Refer to the engineering curricula for a description of the requirements for the Environmental Engineering option offered by the College of Engineering and Mathematical Sciences.

C



The College of Engineering and Mathematical Sciences offers two undergraduate degrees; a Bachelor of Science

degree in Civil Engineering with an Environmental Option accredited by the Accreditation Board for Engineering and Technology (ABET) and a new Bachelor of Science degree in Environmental Engineering that is currently in the accreditation process.

A civil or environmental engineering degree from the University of Vermont is excellent preparation for immediate employment in the engineering area.

Civil and environmental engineers plan, design, construct and manage the built bridges, airports, ski resorts, space stations, irrigation systems, water treatment plants, harbors, and much more. They find ways to clean the atmosphere, treat contaminated environments, and design energy efficient structures, improving the quality of our daily lives now and for the future.

Facilities in the Civil and Environmental Engineering program include numerous laboratories for instruction and research including: concrete, soils, and structures/materials testing laboratories. In addition the department has an environmental fluids laboratory that houses a state-of-the-art groundwater physical model (10' by 14' by 8'), a large 40' flume, and other important hydraulic equipment. The department maintains GIS, transportation and surveying laboratories as well as several environmental engineering chemistry laboratories.

In addition to laboratory facilities inside, the department has several field sites/facilities for education and research activities. A *constructed wetland center* is currently being built at the campus dairy farm. This will be a fully functioning wetland with multiple treatment cells and smaller research cells entirely instrumented for evaluating flow and water quality in the wetland. A *natural ombrotrophic bog* is currently monitored to understand bog hydrology and its impact on biodiversity. Numerous streams and their watersheds, as well as Lake Champlain, are used for research.

UVM students find many unique and creative ways to contribute to projects developing and designing new technologies to solve practical, real-world problems. A team of undergraduates recently helped to develop technologies to clean contaminated groundwater by passing it through a permeable wall while still far below the earth's surface. Undergraduates have helped design treatment wetlands for systems in Italy and Mexico.

For curricula descriptions of requirements for the Bachelor of Science degree in Civil Engineering with the Environmental Option, or for the Bachelor of Science degree in Environmental Engineering please refer to section of the catalogue on the College of Engineering and Mathematical Sciences.

tomology, food science, forestry, geology, genetics, microbiology, nutrition, physics, physiology, plant science, and soil science.

- b. **Social Science:** *Competency may be met by satisfactory completion of two courses in such subjects as: anthropology, community development, economics, geography, history, political science, public policy, psychology, and sociology.*
2. **Humanities & Fine Arts:** Students develop an understanding and appreciation for the creative process and human thought. *Competency may be met by satisfactory completion of two courses in such subjects as art, classics, history, literature, music, philosophy, religion, language, theater.*

Students develop abilities and use tools to effectively communication, analyze, problem solve, think critically and work with others.

1. **Communication Skills:** Students express themselves in a way that is easily understood at a level that is appropriate for the audience.
 - a. **Oral:** Students show confidence and efficacy in speaking before a group. *Competency may be met by satisfactory completion of AGRI 183 (or equivalent) or AGRI 001 where primary focus is public speaking, and an additional course or series of courses in which students present a minimum of three graded speeches, in total, to a group.*
 - b. **Written:** Students effectively communicate in writing. *Competency may be met by satisfactory completion of any English writing course and an additional course or series of courses that uses the writing process (redrafting) for a minimum of three graded papers in total.*
2. **Information Technology:** Students demonstrate mastery of technology for communication, data gathering and manipulation, and information analysis. *Competency may be met by satisfactory completion of AGRI 85 (or equivalent) or AGRI 002 and an additional course or series of courses that uses computers for a minimum of two applications in total.*
3. **Quantitative Skills:** *Students demonstrate the ability to understand and use numbers.*
 - a. **Mathematics:** Students demonstrate the use of numbers for problem solving. *Competency may be met by satisfactory completion of Math 9 or higher.*
 - b. **Statistics:** Students demonstrate the use of numbers for data analysis and inference. *Competency may be met by satisfactory completion of Statistics 111 or higher or NR 140.*
 - c. **Quantitative Skills Application:** Students apply mathematics or statistics skills in a course relevant to their major. *Competency may be met by satisfactory completion of one course that utilizes principles from math or statistics.*
4. **Critical Thinking Skills:** Students demonstrate ability to comprehend, judge, and present written/oral arguments and to solve problems. Students learn how to distinguish between fact, conjecture, and intuition. *Competency may be met by satisfactory completion of any course or series of courses in which students solve problems and analyze, judge, and construct arguments.*
5. **Interpersonal Skills:** Students demonstrate the ability to work well with other people by understanding and using skills of leadership, conflict resolution, and group process. *Competency may be met by satisfactory completion of any course or series of courses that includes leadership, working in diverse groups, conflict resolution, and group process.*

Students are exposed to values that are expressed through relationships with community, the environment, and themselves that are consistent with the mission of the College of Agriculture and Life Sciences

pendent pursuit of study. Honors Committee Guidelines for student projects may be obtained in the Student Services office in Morrill Hall or they are available on the CALS web page at <http://www.uvm.edu/cals/alumni/?Page=awards/honors.html>.

Independent study can be an important aspect of a student's education. Undergraduate research, independent projects, and internships or field practica are examples of independent study which benefit students as they pursue graduate study or seek employment. Over the years a number of undergraduate research projects have been published in well-known scientific journals; and manuals, videotapes, and other products of special projects have been incorporated into classes to enhance the learning environment in the College.

The completed study, in a form appropriate to the area of study, is evaluated first by a departmental review committee. Independent studies of the highest quality will be chosen for College Honors by the Honors Committee. Students are recognized at College Honors Day.

The Justin Morrill Honors Program is a four-year honors sequence for CALS students who are accepted into the University Honors College. It is designed for highly qualified and motivated students desiring an academically challenging undergraduate experience in the broad areas of the life sciences and agriculture.

In their first two years, Justin Morrill scholars will join honors students from across the university in small, interdisciplinary, honors seminars conducted by renowned scholars from the University of Vermont and other institutions. In their junior and senior years, Justin Morrill scholars do honors work within the College of Agriculture and Life Sciences. The program culminates with an honors thesis, an opportunity to conduct independent scholarly research under the guidance of a faculty advisor.

Entering first-year students with outstanding academic records will be invited to participate in the Honors College. Scholars will be required to maintain a minimum grade point average, participate in program activities, enroll in honors classes and successfully complete a Senior Honors Thesis.

Matriculated students in CALS who demonstrate academic excellence during their first year may apply for sophomore 2r/u across the university /F1 for so

junior year, PEP students will be able to apply to the University of Vermont College of Medicine. More information is available on Pep at: www.uvm.edu/~career/?Page=students/premed/pep.html&SM=students_submenu.html.

Tufts University School of Veterinary Medicine offers undergraduates at the University of Vermont an opportunity to apply for admission in the spring of their sophomore year. A limited number of students are admitted, and are guaranteed a space in the veterinary school class once they graduate.

Participants in this program are offered the assurance of veterinary school admission without the substantial investments of time and energy that other pre-veterinary students typically make in the process of preparing, researching, and applying to numerous veterinary schools, and preparing for optimal scores on the GRE. Program participants can select any undergraduate major, explore other areas of interest during their junior and senior years, and choose to study abroad, thus broadening their undergraduate experience.

To be eligible to apply, candidates for this program must be sophomores and must have demonstrated academic proficiency in their coursework, particularly in the pre-veterinary science courses.

It is expected that competitive applicants will have:

- completed at least two science sequences (most typically the year of introductory chemistry and the year of introductory biology) by the spring semester of their sophomore year.
 - completed prerequisite courses at their undergraduate institution or at other universities by special permission of the veterinary school's admissions office.
 - a highly competitive cumulative grade point average.
- AP credit is acceptable as long as it appears on the student's transcript. The GRE is not required for applicants to this joint program; the applicant's SAT scores will be considered during the admissions process.

For more details on the application process and program requirements go to http://asci.uvm.edu/current/opportunities/early_acceptance.html?tp=true

The UVM College of Agriculture and Life Sciences and Massey University Veterinary School in New Zealand offer a B.S./B.V.Sc program. Their B.V.Sc Degree is equivalent to the D.V.M. or V.M.D. degree offered in the United States since Massey University is accredited by the American Veterinary Medical Association (AVMA). Massey has guaranteed admission for the top 5 UVM applicants each year.

The specific courses to be taken for this option start with the Core Program of the College. In addition, each student will be required to successfully complete the following courses and credit hours. The student must have maintained a minimum GPA of 3.0 in the sciences, and must also have met the required minimum score for the Graduate Record Exam (GRE) tests.

Course	Credit
Biology	8
Inorganic Chemistry	8
Organic Chemistry	8
Physics	10
Anatomy & Physiology of Domestic Animals	4

Applications will be made directly to Massey University during the Junior or Senior year at UVM and all decisions will be made by the Massey University Admissions Committee.

For information regarding admissions and/or applications to these exciting programs, contact the [Admissions Office](#), 194 So. Prospect St., Burlington, VT 05401-3596. For specific program information contact Dr. Tom McFadden, Chair, Animal Science, College of Agriculture and Life Sciences, 102 Terrill Hall, UVM, Burlington, Vermont 05405, 802-656-0155 or e-mail Thomas.McFadden@uvm.edu.

Students who have strong academic ability in the sciences and are excited about the future, concerned with contemporary issues, and want a challenging, dynamic career should consider the new cross-college Integrated Biological Science major. This program is designed to provide flexibility in developing a strong and broad background in the biosciences. Students can take advantage of the entire array of University course offerings by selecting basic and applied biology courses from departments within the College of Agricultural and Life Sciences (Animal Science, Botany, Nutrition and Food Sciences, Microbiology and Molecular Genetics, and Plant and Soil Science), the College of Arts and Sciences (Biology) and across the campus (Anatomy and Neurobiology, Forestry, Natural Resources, Pathology, Pharmacology, Molecular

helen.maciejewski@uvm.edu. Some limited veterinary scholarships are also available for upper-level students.

Financial Management	3
Statistics	3
Animals in Society/Animal Welfare	3
Career Seminar	1
Electives ¹	3
Total	32-36

Junior Year	Hours
Dairy Cattle Judging	2
Advanced Feeds	2
Marketing	3
Advanced Dairy Management	15
Accounting	3
Physical Education	1
Electives ¹	6-9
Total	32-35

Senior Year	Hours
Physiology of Reproduction	4
Decision Making	3
Lactation Physiology	3
Senior Project	4-8

students with a modern science-based education designed to emphasize fundamental knowledge of chemistry and biology along with advanced courses specializing in biochemistry and related life- and biomedical-sciences. The Biochemistry curriculum offers students with a strong academic ability in the sciences an opportunity to explore upper-level courses in areas of modern biochemistry and is designed to meet the needs of students wishing to compete in the job market at the B.S. degree level as well as students planning to continue with advanced studies in a graduate or professional degree program.

Students may apply to the program either through CAS or CALS, which vary in their college distribution requirements. The distribution categories and the number of required courses in each category differ slightly. In CAS, students are required to fulfill distribution requirements in six of the following seven categories: foreign languages, fine arts, literature, humanities, social sciences, physical sciences and mathematics, plus complete the general requirements in non-European cultures and race relations and ethnicity in the U.S. In CALS, students are required to fulfill distribution requirements in science, humanities and fine arts, communication skills, information technology skills, quantitative skills, critical thinking skills, interpersonal skills, citizenship & social responsibility values, environmental stewardship values, and personal growth values. Regardless of the College through which students choose to apply, all students must take a core set of basic courses in chemistry, biology, and mathematics in their first two years followed by advanced courses in biochemistry, chemistry, and/or molecular biology in their third and fourth years. Since biochemistry is a "hands-on" science, involvement of students in undergraduate research projects, most of which qualify as honors projects in either College, is strongly encouraged. For more information contact either co-directors of the program: Christopher Landry (Christopher.Landry@uvm.edu), Christopher Francklyn (Christopher.Francklyn@uvm.edu), or John Burke (John.Burke@uvm.edu).

In addition to the CALS or CAS college distribution requirements, the Biochemistry core requires satisfactory completion of BIOL 1, 2 *or*

student research interest include ecology, evolution, cell and molecular biology, growth and development, and physiology (see our departmental web page for a list of completed student projects). Popular study opportunities include our biennial

applied economics and skills in management, strategic planning, marketing, and public policy related to developing or operating a small, natural-resource-based business.

Community Development and International Development (B.S)

Building on a strong, applied economics base, you acquire knowledge, skills, and values necessary to address rural economic and policy problems locally and globally.

Public Communication (B.S)

Majors in Public Communication at the University of Vermont use an integrated approach to communication in the public interest to critically analyze situations, manage information, and craft messages that work in an increasingly global society.

take microbiology, molecular genetics, cell biology and genetics plus additional credit hours of courses as required. Students interested in the Accelerated Masters Program should contact the Department.

Outstanding students with an interest in a graduate degree may apply to enter the Accelerated Masters Program of the Department. In this program students commence study for their master's degree in their senior year and have the potential to obtain a B.S./M.S. in a five-year period.

See Minors in this section.

The Department of Nutrition and Food Sciences (NFS) prepares students to enter the rapidly expanding field of dietetics, food science, nutrition, health, and fitness. Nutrition and Food Science, unique fields of study, are rooted in the physiological, chemical, and biochemical sciences but are comprehensive in scope since they integrate knowledge learned in the social and psychological sciences. The faculty in the department believe that excellence in teaching, research and undergraduate student advisement are critical components of their responsibility to undergraduate education. Through formal course work, field experience, and independent research, students prepare themselves in the biochemical, psychological, and socioeconomic aspects of diet, nutrition and foods. Thus NFS majors are able to meet the current and future needs in nutrition and food science and assume innovative, leadership roles in society and industry.

The course credits earned in NFS provide background in preventive and therapeutic nutrition as well as nutrient requirements for human growth, development, health, and fitness throughout the life cycle. Other courses focus on the physical, chemical, and nutritional properties of food, food safety, and consumer aspects of food related to socio-economic status, life style, cultural beliefs, and health. Although a series of courses providing knowledge in these areas is required of all majors, each student has a generous amount of free elective credits to pursue personal interests.

Department majors may elect to meet the undergraduate requirements needed for admission to medical schools (including naturopathic, chiropractic, or osteopathic) or graduate school in nutrition, food science, sports nutrition, or family and consumer sciences.

Depending on current interests and future plans, majors may select one of four department options:

Dietetics: Dietetics is a profession concerned with the science and art of human nutritional care, an essential component of human health science. The Didactic Program in

15; 1 or 16; 101 or 231 plus two additional elective courses at or above the 100 level, approved by the student's advisor to define an applied design focus for a total of 15 credits.

Arts and Science Majors: Nine of the 15 hours must be at the 100 level or above. The Applied Design minor is not available to students majoring or minoring in Studio Art.

Botany: At least 15 hours of course work to include Botany 4 or Biology 1 or 2; plus three additional courses in Botany, at least one at the 200 level.

Community and International Development: A total of 15 credit hours with twelve from required courses CDAE 2, 61, 102 and either 171 or 296 or 273; and three hours from a list of restricted electives as follows: CDAE 166, 167, 237, 253, 255, or 272.

Arts and Sciences Majors: This minor is also available to Arts and Sciences students. Courses required are: a total of 15 credits with 12 from required courses CDAE 2, CDAE 61 or EC 12, CDAE 102, and either CDAE 171, 273, or 296; and three hours from a list of restricted electives as follows: CDAE 166, 167, 237, 251, 255, 272, EC 140.

Consumer and Advertising: Fifteen credits including CDAE 15, 127, 128, 183, and an advisor-approved elective.

Consumer Affairs: 15 credits including CDAE 127, 128, 157, and 159, plus one of the following restricted electives: CDAE 102, 250, or 255. *Note: CDAE majors must take CDAE 250 as their "elective."*

Environmental Studies: Seventeen credit hours of Environmental Studies including 1, 2; nine hours at the 100 level or above, with at least three hours at the 200 level and may include one non-ENVS course with the approval of a student's advisor and Program Director.

Microbiology: Core requirements are MMG 101 and 104, BCOR 101, 103; plus an additional six credit hours of MMG courses chosen from MMG 195/196, 201, 203, 211, 220, 222, 223, 225, 240, 295/296, 320 depending on student needs.

Arts and Sciences Majors: A student may minor in Microbiology and Molecular Genetics upon permission of the departmental Undergraduate Affairs Committee and assignment of a minor advisor within the department who will direct the student's program plan and course selection.

Molecular Genetics: Core requirements are MMG 101, 104, BCOR 101, 103; plus an additional six credit hours of MMG courses chosen from MMG 195/196, 201, 203, 211, 223, 225, 231, 240, 295/296, 312, 320, 352 depending on student needs.

Arts and Sciences Majors: A student may minor in Microbiology and Molecular Genetics upon permission of the departmental Undergraduate Affairs Committee and assignment of a minor advisor within the department who will direct the student's program plan and course selection.

Nutrition and Food Science: A total of fifteen credit hours in Nutrition and Food Sciences, 9 credit hours consisting of 43, 53, 143, and six credits of NFS courses at or above the 100 level. Independent study, field experience and undergraduate research cannot be counted in this total.

Plant and Soil Science: Sixteen credits including Plant and Soil Science 10 or 11, 161, plus an additional 9 credits in Plant and Soil Science courses at the 100 level or above.

Sustainable Agriculture: Fifteen hours including nine in required courses ASCI 230 or CDAE 208, CDAE 61 and PSS 152; three or four credits from the following restricted electives: ASCI 110, 113, 115, 118, 213, 214, 215, 220, 231, 233, 234, 264 or CDAE 171, 205, 218, 272, 273 or PSS 106, 161, 123, 124, 125, 127, 138, 145, 154, 212, 215, 217; and a three- to six-credit hour internship: AGRI 195 - Special Topics, ASCI 197, 198 or 297, CDAE 196, or PSS 197, 198 or 297, 298.

Agriculture and Life Sciences Majors: Any student in the College of Agriculture and Life Sciences interested in enrolling in this minor should contact the Plant and Soil Science, Community Development and Applied Economics, or Animal Science departments. If accepted, the student will be assigned a "minor advisor" from the department who must approve all program plans and course selections.

Arts and Sciences Majors: Fifteen hours to include: CDAE 61, CDAE 208, PSS 152, one elective at 100 or 200 level in ASCI/CDAE/PSS (see list of approved electives in Department or Dean's offices) and three to six hours internship at 100 or 200 level in AGRI/ASCI/CDAE/PSS. *Note: Students should take their four academic courses before they design their internship experience. Thus, the internship will serve as a culminating event in this program of study. The College of Arts and Sciences requires their students to receive a letter grade for internships taken in minor programs of study.*

The College of Arts and Sciences at UVM combines the advantages of a small liberal arts college and the resources of a major research institution. It provides students with a sound liberal education through close interaction with nationally and internationally noted scholars. This close interaction helps students acquire knowledge and scholarly discipline that enables them to think critically about issues they will confront in their professional and personal lives. The College's academic programs acquaint students with the intellectual, cultural and aesthetic heritage of our complex world. Our programs also seek to prepare students for entry into rewarding careers in a variety of fields and for advanced study that may be prerequisite to other opportunities. More and more professional schools, corporate managers and graduate schools seek individuals who have a fine liberal arts background.

In UVM's College of Arts and Sciences students are encouraged to develop depth and breadth of knowledge, and critical thinking and communication skills that are the hallmarks of a liberal education. Students begin developing these skills in a first-year seminar, and as they complete degree requirements they have the opportunity to explore a wide range of disciplines spanning literature, the humanities, the fine arts, foreign languages, the natural and social sciences and mathematics. The College offers over forty majors from which students may choose.

The offices of the Dean of the College of Arts and Sciences are located in Waterman Building.

calculus. Increasing numbers of medical and dental schools also are requiring a year of English, work in the humanities, social sciences, and languages. There is however no required or preferred major. As long as you complete the courses required by your chosen professional schools, you may pursue any undergraduate major in UVM's College of Arts and Sciences. Medical and dental schools are primarily concerned with the overall scope and quality of undergraduate work. Only about half the first-year students in medical or dental schools have majored in a science, for example. Thus, you should follow your true interests and work to achieve the academic standing necessary for. Your academic advisor will help you plan your program. In addition, the Center for Career Development coordinates pre-medical and pre-dental advising, and has information about the requirements of specific medical and dental schools.

Because the UVM College of Arts & Sciences offers the advantages of a small liberal arts college within a comprehensive university, students have the opportunity to do research with faculty who are nationally and internationally recognized leaders in their fields. We have an excellent record of placing graduates in medical and dental schools. Among the institutions where recent pre-medical graduates are now studying are Albert Einstein College of Medicine, Baylor, Boston University, Columbia, Cornell, Dartmouth, Hanaman Hospital and the Mayo Clinic, while pre-dental graduates are studying at Boston University, Columbia, NYU, Northwestern, and University of Pennsylvania.

The Pre-Medical Enhancement Program (PEP) is a joint offering of the College of Arts and Sciences, the College of Agriculture and Life Sciences, and the College of Medicine to provide enhanced opportunities for a select group of highly qualified pre-medical students. Interested students apply to PEP in the second semester of their first year. Those students accepted in the PEP program will be assigned a practicing physician-mentor who will introduce the concepts of patient care and practice management through regularly scheduled office-based/clinical experiences. The PEP Coordinator in the College of Medicine will provide information on opportunities for medical research experience and volunteer/employment possibilities in the health sciences or health policy fields. On a monthly basis, students will receive listings about special educational offerings at the College of Medicine and the Academic Medical Center. PEP students will also be able to participate in practice interviews with members of the University of Vermont Pre-Medical Committee. In their junior year, PEP students will be able to apply to the University of Vermont College of Medicine. More information is available at: http://www.uvm.edu/~career/?Page=students/premed/index.html&SM=students_submenu.html.

Law: A significant number of UVM students consider attending law school immediately or a few years after graduation. UVM is successful in placing its graduates in leading law programs around the country, including at Yale Univer-

yond the one used towards the original diploma, the additional major and course work will be added to the transcript. A second degree will only be awarded when the additional coursework completed satisfies the requirements for a different degree with a different major from the one initially awarded [i.e., BA graduate with major in Physics completes requirements for BS with major in Chemistry].

- Students who do not complete the degree within seven years must comply with the requirements in the catalogue current at the time of readmission. Students readmitted to complete a second degree, or to complete an additional major within the same degree must also comply with this rule.

D. A student must complete the following courses which comprise the general and distributive requirements for the Bachelor of Arts degree. All courses used to satisfy these requirements must carry at least three hours of credit and may not be taken on a pass/no pass basis. Each semester Special Topics courses and cross-listed courses (95, 96, 195, 196, 295, 296) are offered which may meet general and distributive requirements. Check in the Dean's office if you have a question about a specific course.

General Requirements

1. ***Non-European Cultures:*** One course, other than a foreign language, which deals with non-European cultural traditions.¹ The course selected to satisfy this requirement may also be used to fulfill the distributive requirement, but one course cannot be used to satisfy both General Requirements 1 and 2.
2. ***Race Relations and Ethnic Diversity in the United States:*** One course which addresses centrally the question of race relations and ethnic diversity in the U.S.²

the University (a cross-college minor) must complete 84 hours in courses offered by the departments and programs in the College of Arts and Sciences. The remaining 36 hours of credit, to include courses required for the minor, may be taken in courses offered by any academic unit of The University of Vermont. At least one-half of the credit hours used toward completion of the minor requirements must be taken at The University of Vermont, and application of credits earned elsewhere toward completion of the minor is subject to approval by the appropriate department chairperson or program director. No courses applied toward satisfaction of the minor requirements may be taken on a pass/no pass basis. No more than two of the courses from section D distribution requirements may be applied toward the completion of the minor requirements. Only one course may be applied toward completion of both a major and a minor requirement. The minor grade-point average will be calculated from the first set of courses which satisfy the minor requirements. However, if a student's grade-point average in these courses falls below 2.0, and there are additional courses which are approved for inclusion in the minor, a student may elect to drop for purposes of the grade-point average calculation, one course graded below C and to replace this course with an approved alternate.

- A. A student must earn a cumulative grade-point average of 2.0 in a program consisting of a minimum of 122 semester hours of academic credit for a Bachelor of Music degree with a concentration in Performance. Of these hours of required credit, **two** hours must be associated with physical education activities. Students receiving degrees from the College of Arts and Sciences may apply no more than 10 credits of Physical Educa-

dirts reth a codomults 095mitsc courntionalhich arp-

undertaking a College Honors project during the junior year should contact the Office of the Dean for information concerning the circumstances in which such an exceptional arrangement is possible.

- B. Some departments in the College, including Economics, English, History, Mathematics, Political Science, Religion, and Sociology, sponsor **Departmental Honors** programs. Participation in these programs is limited to those students who are specifically recommended by their department. Each department will define what is required to earn Departmental Honors. A student who successfully completes this program is granted a degree with Departmental Honors. These programs are administered directly by the sponsoring department and information concerning them may be obtained from faculty advisors.
- C. Students admitted to the Honors College may also earn College Honors via their activities as part of the **John Dewey Honors Program**. In the senior year, John Dewey Scholars complete College Honors as described in Section A above. For further information, contact the Honors College or the John Dewey Honors Program.

Students should refer to the general University regulations and procedures pertaining to Study Abroad. For Arts and Sciences students the following additional policies pertain to the application of credit earned in a Study Abroad program:

- A. Regardless of the number of credits accepted in transfer by the University, a maximum of 16 credits earned in a one-semester Study Abroad program will be applied toward satisfaction of degree requirements. For year-long programs, a maximum of 32 credits will be applied toward the degree.
- B. Students must complete 30 of the last 45 hours of degree credit in residence at UVM. One-half of the hours applied toward the satisfaction of major requirements, including 12 hours at the 100 level or above, must be completed at The University of Vermont. One-half of the hours applied toward the satisfaction of minor requirements must be completed at The University of Vermont.
- C. Under no circumstances will a student in the College of Arts and Sciences be permitted to enroll in a University-sanctioned Study Abroad program while on trial.

A student who wishes to transfer into the College of Arts and Sciences from another college or school at the University must comply with the Intercollege Transfer policy in the section on Academic and General Information. Applications for internal transfer may be submitted to the Office of the Dean at any time, and they will be reviewed on a continuous basis.

The following criteria for academic trial and dismissal, while making allowances for the student in the first semester, are designed to encourage academic work of quality at least equal to the minimum which is required for graduation.

Trial

- A. A student who earns a semester grade-point average higher than that which merits dismissal but below 2.00 is placed *on trial*. In order to avoid dismissal from the University, a student who has been placed on trial must in the following semester earn a 2.00 semester average, enroll in all courses for a letter grade, and maintain a program of 12 or more credit hours. No student will be removed from trial until both the semester and cumulative averages are at least 2.00. A student who is on trial may not enroll in a University-sanctioned study abroad program.
- B. First-Year Students. Following the first semester of enrollment, a student who earns a semester grade-point average higher than that which merits dismissal, but below 1.67, is placed on trial and must in the following semester satisfy the same probationary requirements as described above. All first-year students who have a cumulative grade-point average which is below 2.00 after

AREA AND INTERNATIONAL STUDIES PROGRAM

Entering students are invited to consider the option of concentrating in Area and International Studies. Courses in several academic disciplines can be combined so as to focus

ternational Studies 234 and 235 (Honors/International Studies); International Studies 297 or 298 (Advanced Readings and Research). Students should expect to use their competency in a European language (other than English) in this research project where relevant. Upon request, the European Studies subcommittee may approve a research project done in conjunction with a 200-level seminar offered by one of the college's departments.

- B. *European culture and thought*: Twelve hours from the approved list to include six hours at the 100 level or above.

Art: 5, 6, 148, 149, 155, 158, 161, 164, 165, 170, 172, 174, 177, and 179 or 282 (when the content is European); **Classics**: 24, 33, 35, 37, 42, 153–159; **English**: 21, 22, 25–28, 85, 86, 102, 131, 133, 134, 135, 136, 137, 144, 145, 146, 161, 162, 165, 221, 222, 241, 242; **Film**: 5, 6, 107, 161; **French**: 111, 112, 235, 247, 255, 265, 266, 275, 276, 291, 292; **German**: 104, 121, 122, 155, 156, 201, 213, 214, 225, 226, 237, 238, 247, 248, 251, 252, 263, 264, 271, 273, 275, 276, 278, 279, 281, 282; **Greek**: all courses above 100 level; **Italian**: 121, 122, 157, 158; **Latin**: all courses above 100 level; **Music**: 111–113; **Philosophy**: 101, 102, 105, 107, 140, 147, 151, 160, 260; **Political Science**: 141, 142, 146; **Religion**: 22, 111, 116, 122, 124, 173, 224, 226, 228, 280; **Spanish**: 141, 236, 237, 246, 265, 276, 277, 291, 292; **Theatre**: 136, 137, 138, **World Literature** 11, 14, 17, 18, 24, 35, 87, 95, 96, 111, 114, 117, 118, 122, 153–156.

- C. *European history and society*: Twelve hours from the approved list to include six hours at the 100 level or above.

ANTH: 151; **BSAD**: 236; **Economics**: 113; **Geography**: 55, 155; **History**: 13, 14, 19, 21–27, 85, 86, 115, 120–136, 139, 185, 186, 190, 191, 221, 222, 224–228, 285; **Political Science**: 171, 257, 276, 287.

- D. *European language*: Six hours of a European language other than English at or above the 100 level. Students who fulfill nine or more hours of their “Culture and Thought” requirement through the study of any one such language must fulfill this requirement in a second European language other than English.

Note: Other equivalent courses within each area may be accepted with permission of the Director of European Studies.

ART

concentration serves students with interests in Cell, Molecular, and Developmental Biology. Students may choose from: Biology 205, 212, 223, 231, 263, 265, 267, and Honors 208, 209. In addition, students may take approved courses offered by other biologically-oriented departments.

Environmental Biology Concentration: This con-

lege of Arts and Sciences. Additionally, a Bachelor of Science is offered through the College of Engineering and Mathematical Sciences, with majors in either Computer Science or in Computer Science and Information Systems (students interested in the Bachelor of Science degree are referred to the descriptions under the College of Engineering and Mathematical Sciences).

Bachelor of Arts: Computer Science 21, 26, 100, 101, 103, 104, 224 or 243, 292, and three additional computer science courses at the 200-level or above, for at least nine additional credits, not more than three credits of which may be independent study; Mathematics 19+20 or 21+22 (Math. 21+22 are recommended), 54; Statistics 153; the distribution requirement in natural science must be satisfied, and it is recommended that this requirement be fulfilled with a two-semester laboratory science sequence.

world literature or English; and two courses of European or German history.

HISTORY Thirty-three hours including six hours of any approved sequence of courses at the introductory level (00), nine hours at the intermediate level (100), and three hours at the advanced level (200). They must also include 15 hours of concentration in one of the Department's three areas of study (Western Hemisphere; Europe; Africa/Asia/Latin America) and six hours in each of the others. The 15-hour concentration must include one course at the intermediate level and one seminar at the advanced level. (The Western Hemisphere concentration must include three hours in Canadian or Latin American history.)

ITALIAN STUDIES Thirty-three credit hours chosen from the categories below. Among the courses taught in English, no more than 12 credits may be applied from any one academic discipline. Students should consult with their Italian Advisor to assist in selecting a program of courses. Other equivalent courses may be accepted with permission of an Italian Advisor and the Chair of the Department of Romance Languages.

Category A: *Courses in Italian.* At least 15 credits in courses taught in Italian at the 100-level or above. One course in Readings and Research (197, 198) or Advanced Readings and Research (297, 298) may be applied to this category. A College Honors Thesis may be applied to this category if written in Italian.

Category B: *Significant Italian content.* Up to 18 credits from among the following courses: **Art** 149, 161, 164, 282 (if topic predominantly Italian); **Classics** 23, 35, 37, 42, 122, up to 6 credits of Latin language/literature any level; **English** 163 ("Italian American Literature"); **History** 125; **Music** 128, 228; **Philosophy** 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181, 182, 183, 184, 185, 186, 187, 188, 189, 190, 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 211, 212, 213, 214, 215, 216, 217, 218, 219, 220, 221, 222, 223, 224, 225, 226, 227, 228, 229, 230, 231, 232, 233, 234, 235, 236, 237, 238, 239, 240, 241, 242, 243, 244, 245, 246, 247, 248, 249, 250, 251, 252, 253, 254, 255, 256, 257, 258, 259, 260, 261, 262, 263, 264, 265, 266, 267, 268, 269, 270, 271, 272, 273, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 285, 286, 287, 288, 289, 290, 291, 292, 293, 294, 295, 296, 297, 298, 299, 300, 301, 302, 303, 304, 305, 306, 307, 308, 309, 310, 311, 312, 313, 314, 315, 316, 317, 318, 319, 320, 321, 322, 323, 324, 325, 326, 327, 328, 329, 330, 331, 332, 333, 334, 335, 336, 337, 338, 339, 340, 341, 342, 343, 344, 345, 346, 347, 348, 349, 350, 351, 352, 353, 354, 355, 356, 357, 358, 359, 360, 361, 362, 363, 364, 365, 366, 367, 368, 369, 370, 371, 372, 373, 374, 375, 376, 377, 378, 379, 380, 381, 382, 383, 384, 385, 386, 387, 388, 389, 390, 391, 392, 393, 394, 395, 396, 397, 398, 399, 400, 401, 402, 403, 404, 405, 406, 407, 408, 409, 410, 411, 412, 413, 414, 415, 416, 417, 418, 419, 420, 421, 422, 423, 424, 425, 426, 427, 428, 429, 430, 431, 432, 433, 434, 435, 436, 437, 438, 439, 440, 441, 442, 443, 444, 445, 446, 447, 448, 449, 450, 451, 452, 453, 454, 455, 456, 457, 458, 459, 460, 461, 462, 463, 464, 465, 466, 467, 468, 469, 470, 471, 472, 473, 474, 475, 476, 477, 478, 479, 480, 481, 482, 483, 484, 485, 486, 487, 488, 489, 490, 491, 492, 493, 494, 495, 496, 497, 498, 499, 500, 501, 502, 503, 504, 505, 506, 507, 508, 509, 510, 511, 512, 513, 514, 515, 516, 517, 518, 519, 520, 521, 522, 523, 524, 525, 526, 527, 528, 529, 530, 531, 532, 533, 534, 535, 536, 537, 538, 539, 540, 541, 542, 543, 544, 545, 546, 547, 548, 549, 550, 551, 552, 553, 554, 555, 556, 557, 558, 559, 560, 561, 562, 563, 564, 565, 566, 567, 568, 569, 570, 571, 572, 573, 574, 575, 576, 577, 578, 579, 580, 581, 582, 583, 584, 585, 586, 587, 588, 589, 590, 591, 592, 593, 594, 595, 596, 597, 598, 599, 600, 601, 602, 603, 604, 605, 606, 607, 608, 609, 610, 611, 612, 613, 614, 615, 616, 617, 618, 619, 620, 621, 622, 623, 624, 625, 626, 627, 628, 629, 630, 631, 632, 633, 634, 635, 636, 637, 638, 639, 640, 641, 642, 643, 644, 645, 646, 647, 648, 649, 650, 651, 652, 653, 654, 655, 656, 657, 658, 659, 660, 661, 662, 663, 664, 665, 666, 667, 668, 669, 670, 671, 672, 673, 674, 675, 676, 677, 678, 679, 680, 681, 682, 683, 684, 685, 686, 687, 688, 689, 690, 691, 692, 693, 694, 695, 696, 697, 698, 699, 700, 701, 702, 703, 704, 705, 706, 707, 708, 709, 710, 711, 712, 713, 714, 715, 716, 717, 718, 719, 720, 721, 722, 723, 724, 725, 726, 727, 728, 729, 730, 731, 732, 733, 734, 735, 736, 737, 738, 739, 740, 741, 742, 743, 744, 745, 746, 747, 748, 749, 750, 751, 752, 753, 754, 755, 756, 757, 758, 759, 760, 761, 762, 763, 764, 765, 766, 767, 768, 769, 770, 771, 772, 773, 774, 775, 776, 777, 778, 779, 780, 781, 782, 783, 784, 785, 786, 787, 788, 789, 790, 791, 792, 793, 794, 795, 796, 797, 798, 799, 800, 801, 802, 803, 804, 805, 806, 807, 808, 809, 810, 811, 812, 813, 814, 815, 816, 817, 818, 819, 820, 821, 822, 823, 824, 825, 826, 827, 828, 829, 830, 831, 832, 833, 834, 835, 836, 837, 838, 839, 840, 841, 842, 843, 844, 845, 846, 847, 848, 849, 850, 851, 852, 853, 854, 855, 856, 857, 858, 859, 860, 861, 862, 863, 864, 865, 866, 867, 868, 869, 870, 871, 872, 873, 874, 875, 876, 877, 878, 879, 880, 881, 882, 883, 884, 885, 886, 887, 888, 889, 890, 891, 892, 893, 894, 895, 896, 897, 898, 899, 900, 901, 902, 903, 904, 905, 906, 907, 908, 909, 910, 911, 912, 913, 914, 915, 916, 917, 918, 919, 920, 921, 922, 923, 924, 925, 926, 927, 928, 929, 930, 931, 932, 933, 934, 935, 936, 937, 938, 939, 940, 941, 942, 943, 944, 945, 946, 947, 948, 949, 950, 951, 952, 953, 954, 955, 956, 957, 958, 959, 960, 961, 962, 963, 964, 965, 966, 967, 968, 969, 970, 971, 972, 973, 974, 975, 976, 977, 978, 979, 980, 981, 982, 983, 984, 985, 986, 987, 988, 989, 990, 991, 992, 993, 994, 995, 996, 997, 998, 999, 1000.

(four semester of half-hour lessons)

Sophomore Recital/Performance Seminar	1 hour
Junior Recital	1 hour
Senior Recital	1 hour
(in addition to the one hour credit given for MU 250)	
World Music	3 hours
Electronic Music	3 hours
Music electives	9 hours
(pedagogy courses strongly recommended)	

PHILOSOPHY Thirty hours including: (a) 101 and 102; (b) a total of at least four 200-level courses in Philosophy. Students considering graduate work are urged to take Philosophy 13 and to study a foreign language.

PHYSICS Students may select either of two degree programs:

Bachelor of Arts: Thirty-two hours in Physics, including 31 with 21, 42 with 22, 128 with 130, 201 or 202, 211, 213, 273; mathematics through 121 and three hours of approved mathematics electives; Computer Science 21. An additional laboratory science is strongly recommended.

Bachelor of Science: All courses in core and all courses in one of the listed options. Core: Physics PHYS 031 with 021, 042 with 022, 128 with 130, 211, 213, 273; 214 or 274; Mathematics MATH 021, 022, 121; 271 or 230; 124 or 272; Chemistry CHEM 031 and 032; Computer Science CS 021 (C++).

Options: (a) Pure Physics: Physics 201, 202, 265, twelve hours of approved physics electives. (b) Mechanical Engineering: ME 12, 14, 40 with 44, 42, 101, 111, and 143; CE 1; EE 100. (c) Civil & Environmental Engineering: CE 1, 10, 100, 150, 170 and 173; ME 12, 40 with 44; EE 100. (d) Electrical Engineering (Signals and Systems): EE 3, 4, 81, 82, 120, 121, 171, 174, 275 and one course from 276, 277, 295; recommended elective Statistics 270. (e) Electrical Engineering (Circuits and Devices), EE 3, 4, 81, 82, 120, 121, 131, 163, 183, 184, 221.

Bach 273; ma1.0Fl co,32 T08Tj courore and (22, 12, 52, 7108 TD0.0213 T Tc0.06388.0094 2.08 200-lev1532 T08 r 2ptioadv

Courses of Instruction; Asian Studies) including at least two courses in an Asian language, and at least one course in each of two other academic disciplines. At least nine credit hours must be at the 100 level or above. For students who have demonstrated fluency in an Asian language relevant to the other courses they have chosen for their minor concentration (for instance, native speakers of the language) the language requirement will be waived, and courses from a third academic discipline will be substituted.

Canadian Studies: Eighteen hours to include International Studies 91 or History 66 (History 65 upon approval of advisor), and 15 hours to be chosen from the Canadian content list (see major listing for approved courses) of which at least 12 hours must be at the 100 level or above. Students will fulfill the language requirement with French.

Latin American Studies:

- A. Students who are not Spanish majors: 18 hours (six courses)
 - 1. Completion of Spanish 52 or above (three hours).
 - 2. Completion of five of the following courses: Anthropology 161; History 62 or 63, 161, 163, 164 or 262; Geography 56; Political Science 174; Spanish 142, 279, 281, 286, 287, 293, or 294; International Studies 195 or 196.
- B. Students who are Spanish majors: 18 hours (six courses)
 - 1. Completion of one of the following courses: Spanish 279, 281, 286, 287, 293, or 294.
 - 2. Completion of five of the following courses: Anthropology 161; History 62 or 63, 161, 163, 164 or 262; Geography 56; Political Science 174; International Studies 195 or 196.

Middle East Studies:

- A. History 45 and 46
- B. Four courses from among the following: Art 146, Hebrew 195 through 198; History 146, Political Science 157, 168, Religion 116, 130. Other courses with sufficient Middle Eastern content can be used to satisfy this requirement with the permission of the Director of the Middle East Studies program.
- C. Completion of the College of Arts and Sciences language

advisor and the Environmental Program.)

FILM AND TELEVISION STUDIES Eighteen hours, including (a) at least one from FTS 7, 8 or 9; (b) FTS 121, 122, and 123; (c) six hours chosen from any other FTS offerings; Art 4, 139, 140, 143; Italian 122; Sociology 43, 150, 243; Spanish 290 or additional courses approved by the Director of Film and Television Studies. (Students should consult the FTS course brochure and the Registrar's web page each semester for details about available courses.)

FRENCH Eighteen hours in French numbered 100 or above. Required courses: French 101; and three of the following four: 104, 105, 111, 112. Six of the 18 credits must be in courses at the 200 level. Readings and Research (197, 198) or Advanced Readings and Research (297, 298) may not be counted toward a minor.

GEOGRAPHY

Five courses (fifteen hours) which must include: one course from this array: 1, 2, 43, 60, 73, 81; any one regional course (from 51, 52, 55, 56, 57, 90, 92, 151, 154, 155, 162, 190, or 192); any three courses at the 100-level or above.

GEOLOGY One Geology course from 1, 5, 55; 101, 110; plus six additional hours at the 100 level or above.

•Geology 7, Earth Hazards, will not count for the major or minor.

German: Five courses at the 100 or 200 level, one of which must be 155 or 156.

Russian: Russian 51, 52; four courses in Russian at the 100 or 200 level.

HISTORY Eighteen hours of history including three hours in any course at the introductory level (00), plus nine hours at the intermediate level (100) or advanced level (200). These must also include six hours in each of two of the department's areas of study (Western Hemisphere; Europe; Africa/Asia/Latin America).

HOLOCAUST STUDIES History 26; 2 semesters of German (another European foreign language may be substituted after consultation with the director). Requirements: 18 hours of relevant course work, at least 9 of which must be at the 100 level or above, and must include History 139 and 190. No more than three credit hours may come from classes also used to fulfill a major.

INDIVIDUAL DESIGN MINOR The ID Minor must consist of at least 18 hours of course work, of which at least nine hours must be at the 100 level or above. No more than nine hours completed prior to application for the ID Minor may be applied to the 18 hours required for the proposed minor. No courses in the student's Arts and Sciences major department may be applied to the 18 hours required for the minor. An application must be submitted to the Committee on Honors and Individual Studies for approval. Applications may be found in the Dean's Office, College of Arts and Sciences.

ITALIAN Eighteen hours in courses taught in the Italian language and numbered 100 or above. Readings and Research (197, 198) or Advanced Readings and Research (297, 298) may not be counted toward a minor.

ITALIAN STUDIES Eighteen credit hours (of which at least 9 credits must be at 100-level or above) from the following categories:

(A) Courses in Italian: at least 6 credits in courses taught in Italian at the 100-level or above; (B) Significant Italian content: Up to 12 credits from among the courses listed under Category B in the description of the Italian Studies Major; (C) Partial Italian content: up to 3 credits from among the courses listed under Category C in the description of the Italian Studies Major. Among the courses taught in English, no more than 6

credits may be applied from any one academic discipline.

Pure Mathematics: Math. 21 (or equivalent), 22, 52 or 121, and nine additional credits in Mathematics courses numbered 100 or above. Computer Science or Computer Engineering majors may substitute Math. 54 for 52. The course plan for a Mathematics minor must be approved by a Mathematics faculty advisor.

Applied Mathematics: Fifteen hours of mathematics courses numbered 52 or higher, including one of 230, 237, 271.

MUSIC Eighteen hours in Music (MU) comprised of six credits in music history/literature, six hours in music theory (except MU 051) and six credits in performance lessons or ensembles. Nine credits must be at the 100 level or above.

PHILOSOPHY One course from 101, 102, 140; one 200-level course in Philosophy; and 12 additional hours in Philosophy, at least three of which must be at the 100 level or above.

PHYSICS Seventeen hours including 31 with 21, 42 with 22, 128 with 130, and three additional hours at the 200 level excluding 201 and 202. *Note:* Mathematics through 121 is needed for 128.

POLITICAL SCIENCE Eighteen hours in political science, including at least six hours from the "core" courses (21, 41, 51, 71), and at least nine hours at the level of 100 or above. Of the nine hours at the 100 level or above, students must complete at least six hours in UVM political science courses (excluding study abroad, transfer credit, readings and research). Internships will not count toward the eighteen hours required for the minor. At least nine of the eighteen hours used to satisfy this minor must be taken at the University of Vermont.

PSYCHOLOGY Eighteen hours including: (1) 1 and 109*; (2) three of the following: 104, 119, 121, 130, 152, 161; (3) one of the following: 205, 206, 207, 220, 221, 222, 223, 230, 231, 233, 236, 237, 239, 240, 241, 250, 251, 252, 253, 254, 255, 257, 259, 263, 261, 262, 263, 265, 266, 268, 269. *

*Students earning the minor may instead complete Sociology 100.

RELIGION Eighteen hours in Religion including: one introductory course from the 20-27 range; 100; one course from 101-109 range; one intermediate level course on a particular religious tradition (from 110-149); one course at the 200 level; an additional Religion course.

SEXUALITY AND GENDER IDENTITY STUDIES

The Sexuality and Gender Identity Minor will require 18 credit hours, including WGST 75 (Introduction to LGBT Studies). Nine hours must be at or above the 100 level. No more than nine credit hours may come from any one department. No more than 3 total credit hours may come from WGST 191, 192, 297, 298 (internship and Independent Study). No more than three credit hours may come from classes also used to fulfill a major.

SOCIOLOGY Eighteen hours in sociology including Sociology 1; either 100 or 101; three hours in each of two different areas at the 100-level (total six hours); three hours at the 200-level (total three hours). (See Sociology major requirements for list of approved area options.) It is recommended that 1 and 100 or 1 and 101 be completed before the start of the junior year, 1 and 100, or 1 and 101, or instructor's permission, is a prerequisite for enrollment in any 200-level course.

GERONTOLOGY The minor in Gerontology consists of 18 hours. Required courses (12 hours): Sociology 20 (or Human Development and Family Studies 20 or Nursing 20), 120, 220, and 222. Electives (six hours): Anthropology 189; Human Development and Family Studies 266, 282, 283, 284; Nursing 100 or Human Development and Family Studies 152; Sociology 154, 254.

Courses used to meet the requirements of the minor should constitute a coherent program and will be selected in consultation with the student's minor advisor. A list of current course offerings suitable for the minor, including special topics courses in individual departments, is available from the Department of Sociology or the Center for the Study of Aging.

Note: This minor cannot be the sole minor for sociology majors but is acceptable as a second minor, especially for students interested in careers involving work with the aged. Sociology majors who intend to complete a second minor in Gerontology should plan their course of study in close consultation with their advisor so as not to exceed the 45-hour rule and the limit of one course counting toward both a major and a minor.

SPANISH Eighteen hours in Spanish above 100, including: Language: six credits from 101, 201, 202; Literature: six credits (3 of those credits must be in Spanish 140); Electives: six additional credits from courses numbered above 202. Readings and Research (197, 198) or Advanced Readings and Research (297, 298) may not be counted toward a minor.

STATISTICS A Statistics Minor consists of 15 credits of statistics (STAT) courses, acquiring calculus knowledge equivalent to MATH 19 or 21, and gaining computer experience equivalent to STAT 201 or a computer programming course (CS 16 or higher or MATH 52). EC 170: Economic Methods can also be counted in place of STAT 11 or 141 as an introductory statistics course. Not more than seven credits of introductory Statistics 11/51/111/140/141/143/211 or EC 170 may be counted. The course plan for the Statistics Minor must be approved by a Statistics faculty advisor. See more complete guidelines at <http://www.cems.uvm.edu/math/undergrad/statminor.php>.

Note that Mathematics majors can minor in Statistics as well. In Arts and Sciences you must earn 12 of your 15 credits in statistics beyond any statistics courses counted in your major courses. In Engineering and Mathematics you must earn 15 credits in statistics beyond any statistics courses.

THEATRE Theatre 50, 150; two courses from 10, 20, 30, 40; two additional 3 credit courses above level 100.

SPEECH Eighteen hours to include 12 hours from Speech 11, 111, 112, 283-4 or Theatre 5; and six hours from Speech 214 or 283-4, or Sociology 141.

VERMONT STUDIES Eighteen hours (at least five courses), of which at least nine hours must be at the 100 level or above. As an interdisciplinary minor, it must include at least fifteen hours from departments outside the major. Completion of Vermont Studies (VS) 52, three of the following VS courses: 55, 64, 92 or 192, 123, 160, 184, and two additional courses from an approved list chosen in consultation with the Vermont Studies advisor.

WOMEN'S AND GENDER STUDIES Eighteen hours of course work to include WGST 73, 273 and six hours at the 100 level or above to be chosen with the approval of the Women's and Gender Studies Committee or the consent of a Women's and Gender Studies advisor. Students may take a maximum of nine hours in any one discipline toward the minor. Not all sections of a multisection course will necessar-

ily meet Women's and Gender Studies approval for the minor. (Students should consult the course listings each semester for further details.)

ZOOLOGY BCOR 11, 12 or Biology 1 and 2; three courses at the level of 100 or above, chosen from courses within the Biology department, at least one of which must include a laboratory.

The minors listed below have been approved for College of Arts and Sciences students and will fulfill minor requirements for Bachelor of Arts candidates (plus satisfy minor requirements for Bachelor of Science and Bachelor of Music candidates for whom completing a minor is optional.) Please look in the online catalogue at the following link www.uvm.edu/academics/catalogue2005-06/?Page=read.php&p=/Colleges_and_Schools/College_of_Arts_and_Sciences/RequirementsCollege_of_Arts_and_Sciences_Cross_College_Minors&SM=collegemenu.html for the individual courses required for each minor. In some cases, minor requirements differ for Arts and Sciences students and students from other colleges at UVM. In those cases, Arts and Sciences students must complete the requirements listed separately for "Arts and Sciences majors."

Accounting
Agricultural and Resource Entrepreneurship
Animal Science
Applied Design
(this minor is not available to students majoring or minoring in Studio Art.)
Business Administration
Community and International Development
Consumer Affairs
Consumer and Advertising
Forestry
Human Development and Family Studies
(this minor cannot be the sole minor for sociology or psychology majors, but is acceptable as a second minor.)
Microbiology
Molecular Genetics
Nutrition and Food Sciences
Plant and Soil Science
Recreation Management
Special Education
Sustainable Agriculture
Wildlife Biology

The following Arts and Sciences minors are NOT available to students pursuing degree programs not offered by the College of Arts and Sciences:

English
Film and Television Studies
Psychology
Studio Art

The College of Education and Social Services (CESS) offers programs in Athletic Training, Human Development and Family Studies, Social Work, and Teacher Education (Art, Early Childhood PreK-3 Education, Early Childhood Special Education, Elementary, Family and Consumer Sciences, Middle Level, Music, Physical Education, and Secondary Education). First-year students may elect an Undecided major while exploring the above options within the College. Students who have completed one year of course work at UVM and who demonstrate interest in an area of study related to CESS offerings may pursue an Individually Designed program. All programs require course work in the liberal arts and sciences along with professional preparation through course work and internships in school and community settings.

Enrolled UVM students wanting to transfer may secure an application at the Office of Student Services (528 Waterman Building) in the College of Education and Social Services or access the form on-line at <http://www.uvm.edu/~cess/stservices/?Page=forms.html>. Students enrolled in appropriate programs in other colleges may apply to complete teacher licensure requirements for Secondary Education while they remain in their home college. Information and applications for admission to the Teacher Education program are available in the Secondary Education Office, 405A Waterman.

Students will only be considered eligible for transfer if they currently have an overall average of 2.5 and students in teacher education programs must also be able to earn an overall average of 3.0 or above by the taua -1.0871 TD0.3al08 1.0e in tl

Human Development and Family Studies and **Social work** majors may be required by individual agencies to complete the CRC to be eligible for an internship in a specific agency. It is also important to note that membership in professional associations upon graduation, at least in the case of most social work organizations, typically requires a criminal background check as does employment in an ever-increasing number of human service agencies.

Students enrolled in the **Teacher Education** programs are required to complete the CRC to be eligible for the public school teaching internship and may also be required to complete the CRC during the sophomore and junior years. Each individual school makes the determination concerning the sophomore and junior experiences, but it is a State requirement that all students complete the CRC for eligibility to student teach.

The cost for fingerprints and FBI processing is covered by each individual student and is subject to change.

Disciplinary Action Related To Academic Performance

Disciplinary actions, such as placement on trial, disenrollment, or dismissal are designed to encourage high level academic work from students. The CESS guidelines are more stringent than those for the University. Students, including first-year and new transfer students, can be dismissed without first being placed on trial.

A student is subject to academic disciplinary action, including dismissal from the University, if (a) his or her semester or cumulative average falls below 2.0; **or** (b) if he or she has failed six or more credit hours of course work in a given semester. This includes first-year and new transfer students.

A student who has a cumulative grade-point average of 2.0 or higher, but too low to meet specific program requirements, will be warned of pending disenrollment. Also, students who do not follow course requirements or who have not earned an appropriate grade point average for their program will be warned of pending disenrollment. If at the end of two subsequent semesters the student has failed to meet the requirements (courses and/or gpa) of his/her program, he/she will be disenrolled from the College.

Students who are placed on trial rather than being dismissed and who do not meet the conditions of trial will then be dismissed.

Students with "on-trial" status will not be allowed to participate in their senior internship, and they will not be eligible to graduate.

Programs of Study

Human Development and Family Studies, Social Work and Teacher Education (Art, Early Childhood PreK-3, Early Childhood Special Education, Elementary, Family and Consumer Sciences, Middle Level, Music, Physical Education and Secondary Education.)

HDFS 266–Seminar: Theory	3	–
HDFS 296–Field Experience	6	–
HDFS 260–Family Ecosystem	–	3
Electives	<u>3</u>	<u>12</u>
Total	12	15

Human Development and Family Studies is also available as a major concentration for students in the Early Childhood, Elementary, Family and Consumer Sciences, and Physical Education licensure programs, and as a cross-college minor.

The principal educational objective of the Social Work Program is to prepare students for beginning generalist social work practice with individuals, families, small groups, organizations, and communities.

The Program provides education for social work practice based on a liberal arts education in the social sciences and humanities. The program is fully accredited by the Council on Social Work Education. Throughout the program of study, students gain the values, knowledge, and skills necessary to provide social services and to effect social change in institutions and communities.

The Bachelor of Science degree in Social Work requires a minimum of 122 approved credit hours, 27 credits of which are general education components from the six approved academic areas (Arts and Letters, Mathematics, Science, Social Sciences, Humanities, Health and Physical Education), including two credits for physical education activities and one credit for Race and Culture Studies. Additionally, students are required to take at least one course that focuses substantially on issues concerned with Africa, Asia, Latin America, the Middle East, or countries known as the Third World.

The student in consultation with his/her advisor, selects elective courses which will provide the opportunity to develop individual interests. Additional courses in anthropology, education, foreign language, history, philosophy, political science, psychology, sociology, statistics, special education, and women's studies are recommended. Students who intend to pursue a Master of Social Work (MSW) degree are strongly advised to take a course in statistics.

A committee of Social Work faculty may review students' progress each semester throughout the four years. Students may be asked to participate in that process if the faculty deems necessary.

Students must complete the required liberal arts courses with a minimum grade of C-; completion of the initial Social Work courses (SWSS 2, 3, 5, 47, 48, 60) with a minimum grade of C; completion of the upper level Social Work courses (SWSS 164, 165, 166, 168, 169, 171, 172, 173, 174) with a minimum grade of B and an overall GPA in all courses of 2.0.

A typical, but not all-inclusive, program outline follows:

FIRST YEAR	Fall	Spr
SWSS 2, Foundations of Social Work	3	–
Third World Elective	3	–
SOC 1	3	–
Humanities Elective	3	–
Electives	3	6
Race and Culture	–	1
POLS 21	–	3
PSYC 1	–	3
SWSS 3, Human Needs & Social Services	–	<u>3</u>
Total	15	16

SOPHOMORE YEAR Fall Spring

SWSS 47, Human Behavior in the Soc. Env. I	3	–
EC 11	3	–
PSYC 152	3	–
ENG 50	3	–
Physical Education Elective	1	–
Electives	3	6
BIOL 3 or SWSS 5, Biosociopolitical Issues	–	3
SWSS 48, Human Behavior in the Soc. Env. II	–	3
SWSS 060, Racism & Contemporary Issues	–	<u>3</u>
Total	<u>16</u>	15

JUNIOR YEAR	Fall	Spr
SWSS 164, Intro Social Work Research	3	–
SWSS 165, Issues & Policy in Soc. Welfare I	3	–
Electives	9	12
Physical Education Elective	–	1
SWSS 166, Issues & Policy in Soc. Welfare II	–	<u>3</u>
Total	<u>15</u>	16

SENIOR YEAR	Fall	Spr
SWSS 168, Social Work Intervention I	3	–
SWSS 171, Field Experience Seminar I	3	–
SWSS 173, Field Experience	6	–
SWSS 169, Social Work Intervention II	–	3
SWSS 172, Field Experience Seminar	–	3
SWSS 174, Field Experience II	–	6
Electives	<u>3</u>	<u>3</u>
Total	<u>15</u>	15

In the senior year, students spend approx. 15 hours/wk. over two semesters (450 total hours) as interns in a public or private social service agency. In the Fall semester, students must enroll concurrently in SWSS 168, SWSS 171, and SWSS 173. In the Spring semester, students enroll in SWSS 169, SWSS 172, and SWSS 174.

Typically students apply for SWSS 173 Field Experience in the spring of Junior year. Application for the Field requires consultation with the student's advisor to determine that all introductory and intermediate professional and required courses have been successfully completed. The process in-

programs are required to have a minimum overall grade point average of 2.5 or higher and it must be possible to earn an overall average of 3.0 before reaching program completion.

Academic Major All students who enroll in the Teacher Education programs are required to complete a 30 hour (minimum) major in the liberal arts and sciences. It is essential for students to complete many liberal arts and sciences requirements during the first two years of their program. Copies of the options and the requirements are available through the Office of Student Services, 528 Waterman and on the web at www.uvm.edu/~cess/. Students are encouraged to select one Highly Qualified Teacher (HQT) approved content area.

Students in Secondary Education complete a major (minimum 30 hours) and a minor (minimum 18 hours) or a broadfield major (minimum 48 hours) from a very specific list of options.

Students in Middle Level Education complete an Individually Designed Interdisciplinary Major Concentration (IDIMC).

Students in Early Childhood, Elementary, Family and Consumer Sciences, and Physical Education complete a 30 hour (minimum) major concentration and are strongly encouraged to select a specific discipline, but they also have the option of creating an Individually Designed Interdisciplinary Major Concentration (IDIMC).

Portfolio Development and Professional Licensure

In accordance with the Standards for Vermont Educators (Vermont State Board of Education, 1991), students seeking a license to teach must develop documentation that they can perform in ways that address State standards. Each candidate must assemble that documentation in a preprofessional portfolio according to program guidelines. While students have candidacy status, they should maintain a file which includes all materials from courses completed so that selected items can be included in the portfolio.

Application to Teacher Education Candidates interested in pursuing teaching as a career apply to the teacher education program of their choice. Applications are available in each departmental office. Once the candidate's application is complete, the program faculty will review the materials which include a record of academic performance at UVM, recommendations from University and public school faculty, evidence of superior course work, passing scores on PRAXIS I (or fulfillment of this requirement by one of the approved alternate options), as determined for Vermont, and other pertinent sources of information. All students must apply for acceptance into the teacher education segment of their program. Students are required to complete this application and gain acceptance before being eligible to enroll in the professional education courses. This includes: CESS students who are already enrolled as candidates in the teacher education programs; students who transferred to the CESS; and students in other colleges on campus who plan to maintain their primary affiliation with their home college while completing the SDE approved requirements in the CESS.

Students who meet the criteria and are eligible will be accepted. CESS students who do not meet the criteria for admission to Teacher Education will receive a warning of pending disenrollment letter. Students who are warned of pending disenrollment should meet with the program coordinator and determine if program completion is an option.

Students who have not successfully fulfilled the PRAXIS I requirement may appeal for conditional acceptance.

Application to Student Teaching If a candidate's application to a teacher education program is approved, the candidate completes a sequence of professional education

courses and applies during the junior year to intern as a student teacher senior year. The candidate submits his/her portfolio and application to student teach to the Program Coordinator. The application lists the current set of criteria that permit a candidate to qualify for student teaching. Included among the criteria are a record of strong academic performance in program and University courses, recommendations from education faculty, and evidence of superior course work and passing scores on PRAXIS I as determined for Vermont. Once admitted to student teaching, the student must successfully complete the interview process and be accepted by an approved public school teacher/administrator before being placed for student teaching. After placement, the student will carry out an internship under the guidance of an approved cooperating teacher and department supervisor. Student teachers will be placed in Professional Development Schools or Partnership Schools. Although many students remain in the Burlington area, not all can be placed close to campus. Effort is made to accommodate student preference regarding placement site and the semester during which student teaching will occur. All students should be prepared to student teach in either the fall or spring semester of their senior year. Candidates must meet specific requirements to be recommended for licensure. These requirements are available in the Office of Student Services, 528 Waterman.

Note: Students who are not admitted to student teaching may appeal through the College Student Affairs Committee.

Application for Licensure Students who successfully complete a Teacher Education program are eligible to apply for licensure. The Licensing Newsletter which explains this process is available in 528 Waterman as well as on the web at www.uvm.edu/~cess/. Applications for licensure are **only** available from the Vermont State Department of Education (802-828-2445).

Teacher Assessment-PRAXIS Undergraduate Students: Students are required to submit passing scores for PRAXIS I (refer to chart) as part of their application to the professional portion of their Teacher Education program. If all three areas have not been passed, the student may appeal for conditional acceptance. Passing scores must be received by the program for all three content areas of PRAXIS I before the student is considered eligible for a teaching internship placement.

Teaching endorsements as listed on the chart require passing scores on PRAXIS II for Vermont licensure. Science endorsements require passing scores on both General Science as well as the specific area (e.g. Chemistry, Biology, etc.). Endorsement areas which have both multiple choice and a constructed response (essay) options require a passing score in one option for PRAXIS II. Refer to the Vermont Department of Education website for current information.

PBTP and Licensing Masters: Applicants will provide passing scores on PRAXIS I & PRAXIS II (if required for endorsement) before being admitted to the program. Students who receive conditional acceptance must provide passing scores for PRAXIS I & PRAXIS II (if required for endorsement) before being eligible for a teaching internship placement.

1. Candidates for initial licensure may meet **either** the three individual Praxis I test scores (i.e., Reading-177, Writing-174, and Mathematics-175) **or** a composite score of 526 (i.e., the total of the three test scores).

2. The following assessments have been approved as alternatives to PRAXIS I. Students must meet both the total score as well as the minimum scores as equivalent to earning passing scores on PRAXIS I.

	<i>Total Score</i>	<i>Verbal/ English</i>	<i>Math/ Quantitative</i>
Graduate Record Exam (GRE)	1100	500	500
Scholastic Aptitude Test (SAT)	1100	500	500
ACT		22	22

PRAXIS II

Art	Essay: 148
Biology	Multiple Choice: 161/Essay: 150
Chemistry	Multiple Choice: 150/Essay: 150
Earth Science	Multiple Choice: 158/Essay may be added.
Elementary	Multiple Choice: 148/Essay may be added.
English	Multiple Choice: 172/Essay: 160
General Science	Multiple Choice: 157/Essay may be added.
Mathematics	Multiple Choice: 141/Proofs, Models, & Problems, Part I: 154
Music	Multiple Choice: 153/Essay: 150
Physical Education	Multiple Choice: 147/Essay: 154
Social Studies	Multiple Choice: 162/Essay: 165

2003-2004 Teacher Examination Pass Rate – PRAXIS I Basic Skills

Reading: 95%; Writing: 98%; Mathematics: 90%.

Testing Requirements for Educator Licensing Brochure - <http://www.state.vt.us/educ/new/html/maincert.html>

Teacher Education/Art Education (Grades K-12)

The College works cooperatively with the Art Department in the College of Arts and Sciences to offer a program in Art Education which leads to both degree and licensure for grades PreK-12. Students fulfill course requirements in general education, professional art education, professional education courses, studio art, art history, and related subjects. Graduates satisfy College of Education and Social Services requirements for teacher licensure and partake in coursework in the Art Department in the College of Arts and Sciences. The program allows sufficient additional advanced courses as recommended by the Art Department for admission to graduate school.

Students must be enrolled in the College of Education and Social Services. Those admitted as first-year students or sophomores to the Art Education Program are considered Candidates in the Program. Admission as Majors is made at the beginning of the junior year following formal review procedures during the second semester of the sophomore year.

Students must meet with their advisors and get approval to set up student teaching and accompanying courses prior to enrolling in student teaching.

A minimum of 124 approved semester hours is required for the degree including three semester hours of teaching reading for teacher licensure.

Students are responsible for obtaining information regarding teacher licensure and degree requirements from the Office of Student Services, 528 Waterman, or the College Web site: www.uvm.edu/~cess/.

A typical, but not all-inclusive, program outline follows:

FIRST YEAR	Fall	Spr
HDFS 005–Human Development	3	–
Studio Art Foundation	3	3
Art History	3	3
General Education Courses	6	6
EDSP 005–Iss. Affecting Persons with Disabilities	–	3
EDSS 011–Race & Culture	–	1
Total	15	16

SOPHOMORE YEAR	Fall	Spr
Studio Art Foundation	3	–
Art History Elective	3	–
Studio Art	3	6
Physical Education Activities	1	1
General Education Courses	6	6
Elective	–	3
Total	16	16

Students apply to the Art Education Major during second semester of sophomore year. Students must be accepted in order to enroll in required methods courses.

JUNIOR YEAR	Fall	Spr
EDAR 177–Curriculum & Pract. in Elem. Art 4	4	–
EDAR 178Curriculum & Pract. in Middle/HS Art 4	4	–
Studio Art	6	6
Electives	3	3
EDAR 283–Current Issues in Art & Ed.	–	3
EDAR 284–Current Issues in Art & Ed.	–	3
* Literacy Requirement	–	3
Total	17	18

* EDSC 215, EDML 177 or EDLT 236

SENIOR YEAR	Fall	Spr
EDFS 203–Soc., Hist. & Phil. Found. of Ed.	3	–
Studio Art	6	–
Electives	6	–
EDSC 226–Teaching Internship	–	12
Total	15	12

Teacher Education/Early Childhood Education (Birth-Gr3)

The Early Childhood Education Program is designed to provide students with the perspectives and skills necessary to work with young children from birth through grade three in inclusionary, developmentally appropriate settings. These include the abilities to:

- Facilitate children’s development of literacy, quantification, and inquiry skills.
- Offer instruction in an integrated day format.
- Assess educational progress from a portfolio perspective.
- Use educational materials in an open-ended fashion.
- And recognize and respect the diversity of family structures within our society.

The program involves a large field-based component and makes significant use of the UVM Campus Children’s Center and elementary schools as practicum sites. Graduates of the program who successfully complete all requirements are eligible for licensure from the State of Vermont.

The Birth-Gr3 Professional Preparation Sequence involves three components. The first is a course in Child Development and a course in Family Relations. The child development course introduces students to the concepts that form the practical and theoretical foundation of the program’s educational approach. The family relations course provides students a foundation in family dynamics and parent-child relationships and serves to emphasize the important links between children’s home and school experiences. These two courses are taken prior to formal admission into the Birth-Gr3 program.

The second component is a three-part professional practices sequence. This sequence provides students a first exposure to the rationale, practices, and procedures used in the provision of developmentally appropriate educational experiences for young children. The sequence includes opportunities for observation and hands-on work with children, opportunities to assist teachers in the provision of developmentally appropriate educational experiences and to discuss with teachers

assessment and the development of curriculum.

The third professional course (EDEC 189) is a full semester full time student teaching experience in either one of the rooms of the UVM Campus Children's Center or in a community placement. Over the course of the semester, students, under the supervision and mentorship of the classroom teachers, gradually assume more responsibility for all aspects of the curriculum as well as contact with families.

Once students complete EDEC 189, their professional course work becomes increasingly focused on learning to design services and supports for young children with diverse abilities and their families. EDSP 5 helps students gain a fuller appreciation for the issues affecting persons with disabilities, including the legal issues affecting the provision of services to individuals. CMSI 94 helps students gain a fuller understanding of the development of spoken language. Since issues related to early language development are a common element in working with young children with disabilities, an understanding of the process of language development is an essential component of all good teaching. ECSP 202 focuses on the characteristics of and interventions for infants, toddlers, preschools and kindergarten children who have disabilities and their families. The course reviews the nature of these disabilities and the strategies that are used for interventions. ECSP 211 covers the various assessment strategies that are used in early childhood special education to help determine eligibility; priorities, resources, and concerns of the family; strengths and areas of growth for the child; and the most effective ways to best support the child's developmental and educational growth. ECSP 210 focuses on curriculum planning to meet the needs of young children with disabilities and their families within home, center, or other settings (play groups).

The ECSP Professional Sequence is completed with ECSP 187, a student teaching experience in two settings (0-3 and 3-6) working with young children with diverse abilities and their families.

For more information, contact Dale Goldhaber (dale.goldhaber@uvm.edu) at 656-2025 or Susan Maude (susan.maude@uvm.edu) at 656-4018.

The course of study consists of 128 credits which are divided into eight categories:

- Major concentration in a liberal arts and sciences discipline
 - General Education courses
 - Professional Preparation Sequence
 - Health and Physical Education modules
 - Race and Culture course
 - Multicultural Electives
 - Physical Education Electives
 - Electives*

*The number of electives depends on the degree of course overlap in the General Education, major concentration, and the multicultural requirements.

A typical, but not all-inclusive, program outline follows:

FIRST YEAR	Fall	Spr
EDEC 63, Child Development	3	-
Physical Education Activity	1	-
Physical E0.1(-)(i)]TJ.237-953.6(1)-3453.les		

rate of inclusion of learners with special challenges in the regular classroom setting. Being educated at UVM means elementary education students learn about and practice the application of instructional adaptations for learners of exceptional need.

Elementary Education Curriculum The elementary education curriculum includes a general education component of 60 credits from the academic areas outlined earlier. Included in the 60 hours must be two semester hours of physical education activities. Students are required to complete an approved major concentration, consisting of at least 30 hours of study in a liberal arts and sciences discipline.

IDIMC that accommodates the student's interests and fits the needs of middle level teachers. One of the two areas must be an approved Highly Qualified Teacher (HQT) content area.

Professional Studies Courses that concentrate on the professional work of teaching, span all four years. These studies are grounded in theory, research and policies associated with the very best practices in middle level education. Studies of young adolescent learning and development, teachers and teaching, literature for young adult readers, special education and technology are taken in the first two years as Pre-Professional Requirements. These courses include a minimum of one field placement with a middle level team of teachers. More heavily field-linked courses in curriculum, pedagogy, assessment, team organization, literacy, mathematics, and evaluation and assessment are taken the last two years. Required professional courses over four years total of 57 credits.

Fieldwork The faculty is committed to providing students as much field experience as possible and practical. Four courses (EDML 56, 261, 271, 285) are primarily field-based, and while taking these courses students will enjoy working with teachers on four different teaching teams. Emphasis is placed on high levels of integration between campus-based learnings and field experience to insure that students are sufficiently oriented and prepared for the real work of exemplary middle level schools.

Cohort Cooperation and collaboration among teachers is a hallmark of middle level teaching teams. That same spirit is given emphasis through building a cohort of middle level teacher education students who receive group advising, who take courses together, and who participate in professional activities such as school events and professional conferences. Additionally, the Middle Level Teacher Education Program includes a Teacher Advisory Committee composed of exemplary middle level teachers from area schools who consult with students and faculty about the Program, field placements, job searches and other issues related to advancing one's professional development and beginning career.

Professional Portfolio Each student will develop a professional portfolio that demonstrates the student's growth and development in the field of middle level teaching. The portfolio will include evidence of the student's professional growth and development in the field of middle level teaching. The portfolio will be reviewed by the faculty and the student's advisor. The portfolio will be used to determine the student's readiness for the field placement and the student's readiness for the final exam. The portfolio will be reviewed by the faculty and the student's advisor. The portfolio will be used to determine the student's readiness for the field placement and the student's readiness for the final exam.

Education Program, 405A Waterman or on the web (<http://www.uvm.edu/~cess/>). During the first two years, students concentrate on completing general education and major/minor requirements, while also taking selected coursework in education. The majority of professional education coursework is completed in the junior and senior years.

General Education Component (Minimum of 27 credits)
The general education courses must include the following courses.

- English Composition and English Literature
- Science
- Mathematics
- U.S. History
- American Government
- Psychology 1
- Humanities (Philosophy, Religion, Foreign Language)
- Physical Education activities (2 semester hours total)
- Race and Culture (EDSS 11 or approved equivalent)

Academic Major and Minor Components (major minimum of 30 credits, minor minimum of 18 credits or broadfield major of 48-52 credits): Students who successfully complete their Teacher Education programs are recommended for licensure with a first endorsement in their major.

Professional Education Component (45 credits) By the time students begin the intensive professional education component of their program as juniors, they should have completed most of their general education requirements, have taken 12 credits of professional education coursework, and be well into their academic major (15-18 credits completed) and their academic minor (six-12 credits completed). Students must complete the remainder of their requirements as they complete the following phases of the professional education component:

I.Exploring Learners' Needs in the Context of Schools: EDFS 203, EDSC 207, 209.

Following completion of this first phase, students must submit their Initial Portfolio and their application to the Teacher Education Program. The Initial Portfolio documents learning, professional knowledge, collegueship, advocacy and accountability. Provided the Initial Portfolio is assessed as satisfactory, the student has achieved passing scores on PRAXIS I, has a minimum 2.6 GPA overall, 2.6 in his or her major, and was successful in EDFS 203, EDSC 207 and 209 (3.0 or better), the student is accepted into Teacher Education and may begin work on the second phase of the program.

II.Designing and Adapting Instruction: EDSC 215, 216 and subject methods.

Subject methods for major: EDSC 225 (Social Studies), EDSC 227 (Science), EDSC 240 (English), EDSC 257 (Mathematics), or EDSC 259 (Foreign Languages).

During this phase of the program, prior to student teaching, students must have an overall GPA of 3.0 and a minimum GPA of 2.75 in their major. Following a successful faculty review of a student's records, he or she is nominated for a placement. Students must successfully complete the interview process with school personnel in order to be confirmed for student teaching. Students complete a semester of full-time student teaching as the third phase of the program.

III.Achieving Results in Schools: EDSC 226, 230.

As students complete their degree program, each licensure candidate must submit a portfolio which documents competence with program and state licensure requirements (ROPA).

tion oo student teachinve an overalrogde-poe i a ovegase um
satisfacto L(Durin.ll Portca-)Tj0 -1.0871 TD0.0102 Tc-010941 Twfol), aect etsnd stats a credtuTPi d s10trhods.

an

ane

The College of Engineering and Mathematical Sciences

The College offers stimulating, professionally-oriented programs for students interested in careers in computer science, engineering, and mathematics. Computer science develops creative problem-solving ability, along with essential skills in current programming and computing environments. It offers the flexibility to gear studies toward business, science, engineering, mathematics, and the arts. Engineering education combines the study of mathematics and the physical, life, and engineering sciences with application to the analysis and design of equipment, processes, and complete systems. The breadth and flexibility of the engineering programs provide a sound background for engineering practice in public or private domains, for graduate study in engineering and science, and for further professional study in such fields as business, law, or medicine. Engineering management, offered in cooperation with the School of Business Administration, combines a basic education in an engineering discipline with the study of management concepts and techniques. Mathematics and statistics are designed to train students in critical thinking, problem solving, and sound reasoning, while developing a strong level of technical competence and a substantial breadth of exposure to other fields. Bachelor of Science degrees in each of these disciplines provide distinctive recognition based on challenging course work, valuable field experience, and intensive student-faculty interaction.

The following degrees are offered in the College. Various options in each degree are described under the individual degree program.

- Bachelor of Science in Civil Engineering
- Bachelor of Science in Computer Science
- Bachelor of Science in Electrical Engineering
- Bachelor of Science in Engineering Management
- Bachelor of Science in Environmental Engineering
- Bachelor of Science in Mathematics
- Bachelor of Science in Mechanical Engineering

The Bachelor of Science degree program may be completed with an approved major in one of the following fields:

- Computer Science and Information Systems
- Statistics

In order to continue as a major in the College of Engineering and Mathematical Sciences, a student must achieve a 2.0 cumulative grade-point average at the end of the semester in which 60 cumulative credit hours have been attempted. No more than three repeated course enrollments are allowed during this 60-credit period. In the case of transfer students, applicable transfer credits will be included in determining the 60 credit hours, but grades in these courses will not be included in the grade-point average.

Students who receive a cumulative or semester grade-point average of less than 2.0 will be placed on trial. Students who have failed half their course credits for any semester, or who have had two successive semester averages below 2.0, or three successive semesters in which their cumulative grade-point average falls below 2.0, are eligible for dismissal.

To receive a degree, students must have a minimum cumula-

tive average of 2.0. Students must complete 30 of the last 45 hours of credit in residence at UVM as matriculated students in the College of Engineering and Mathematical Sciences. Additional degree requirements are specified for each major.

No more than three grades of D, D+, or D- in the courses normally taken as part of the junior and senior curriculum in the student's major program will be acceptable. Requirements in each department are specified by the respective program curriculum committees.

A course may not be taken for credit if it is a prerequisite to one for which credit has already been granted, except by permission of the student's advisor.

Only two credits of physical education will count toward the total credits needed.

Students must comply with the degree requirements as stated in a single catalogue edition in place during the time they are enrolled. The catalogue edition to be followed is the one in effect at the time the student enrolls at UVM, unless the student requests in writing to follow an edition that is published subsequently during his/her enrollment at UVM. Students may not mix requirements from different catalogues.

First year students: Student who receive a cumulative GPA less than 1.67 after the first year are in danger of not being able to complete a degree in the College of Engineering and Mathematical Sciences. These students will be required to reassess their academic direction with the aid of their advisor and the Academic Dean.

Minor in Computer Science A Computer Science Minor consists of 18 credits in computer science to include 100 or 103, 104, and three additional credits at the 100 level or above. Some Computer Science courses require additional prerequisites.

Minor in Electrical Engineering A minor in Electrical Engineering consists of at least 19 credit hours in Electrical Engineering courses distributed as follows: 3, 81, 4, 82, plus at least nine credit hours numbered above 101. Prerequisite courses for the minor are Math. 21, 22, 121, 271 (or 230) as well as Physics 31, 21, 42, and 22. Each student in the minor program will be assigned an Electrical and Computer Engineering faculty advisor who will assist the student in developing an individualized plan of study. The plan of study of the minor must be approved by the Electrical and Computer Engineering faculty advisor.

Pure Mathematics: Math 21 (or equivalent), 22, 52 or 121, and nine additional credits in Mathematics courses numbered 100 or above. Computer Science or Computer Engineering majors may substitute Math 54 for 52. The course plan for a mathematics minor must be approved by a mathematics faculty advisor.

Applied Mathematics: Fifteen hours of mathematics courses numbered 52 or higher, including one of 230, 237, 271.

Minor in Statistics A Statistics Minor consists of 15 credits of statistics courses, acquiring calculus knowledge equivalent to Math. 19 or 21, and gaining computer experi-

- Computer Science (35 credits): 14, 21, 26, 100, 101, 104, 148, 292, plus 3 additional credits (1 course) at the 100-level or above (CS 103 is recommended for students who wish to pursue graduate study in computer science), plus 9 additional credits (3 courses) at the 200-level; not

Engineers. Each of these organizations has an authorized student chapter at UVM. Engineering students demonstrating high scholarship attainment, combined with exemplary character, are recognized by membership in the Vermont Alpha Chapter of Tau Beta Pi, the national engineering honor society. In addition, all engineering students may become affiliated with the student chapter of the Society of Women Engineers. These student organizations present opportunities for students to conduct activities similar to those of the national societies.

Civil and Environmental Engineering

Two undergraduate degrees are offered; a B.S. in Civil Engineering (both general and environmental options available), and a B.S. in Environmental Engineering. The curricula provide a strong foundation in mathematics, and physical, natural and engineering sciences. Instruction in civil engineering disciplines includes structural engineering, soil mechanics, hydraulics, environmental engineering, and transportation engineering. Instruction in environmental engineering includes surface and groundwater hydrology, water and wastewater engineering, ecological engineering, and air pollution.

The B.S. in Civil Engineering, general option, requires a minimum of 131 credits.

The B.S. in Civil Engineering, environmental option, requires a minimum of 130 credits.

The B.S. in Environmental Engineering requires a minimum of 130 credits.

A civil or environmental engineering degree from the University of Vermont is excellent preparation for immediate employment in engineering. Additionally, many of our graduates continue their education in graduate engineering programs, or graduate programs in business, law, and medicine.

A systems approach to civil and environmental engineering problem solving is central to our curricula and involves integrating the short and long-term social, environmental and economic aspects and impacts into engineering solutions. As part of this approach, service-learning projects with local communities and nonprofit groups are incorporated in many of our core courses. Real-world engineering design culminates in a required major design experience in the senior year, which draws upon prior course work and focuses on technical and nontechnical issues and expectations of professional practice. Other activities that enhance the undergraduate education of students include opportunities for laboratory and research experience, an increased Information Technology (IT) content of courses, and a strong sense of community between students and the faculty.

No more than three grades of D, D+, or D- will be acceptable in all required courses in engineering and engineering science including design and professional electives as stated in the curricula below for the junior and senior years.

Civil Engineering

OPTIupTjT17. 64 TwGon, reqeeringaMo1 Teering design 7()31urse worofess a57-(CE 3,T) th10Geceaespe-10

Physics 42, Electromag. & Modern Physics	4	-
CE 1, Statics	3	-
CE 10, Geomatics	4	-
Statistics 143, Statistics for Eng.	3	-
CS 16 (CE 11) MAT Lab	-	4
Math 271, Applied Math/Eng.	-	3
CE 130 Env/Trans Systems	-	3
ME 12, Dynamics	-	3
HSS Elective ¹	-	3
	18	16
JUNIOR YEAR		
	Fall	Spr
CE 100, Mech. of Materials	3	-
CE 101, Materials Testing	1	-
CE 131, Dec Analysis in Env/Trans	3	-
CE 160, Hydraulics	4	-
Science Elective - CHEM 32 or BIOL(1 or 2)	4	-
CE 132, Modeling Env/Trans Systems	-	3
CE 151, Water and Wastewater	-	3
CE 154, Environmental Analysis	-	2
CE 170, Struct Analysis I	-	4
CE 180, Geotechnical Principles	-	4
	15	16
SENIOR YEAR		
	Fall	Spr
EE 100, Electrical Engr. Concepts	4	-
HSS Elective ¹	3	-
Professional Elective		

Engineering design is developed and integrated in each student's program and culminates in a required major design experience which draws upon prior course work and which focuses on the issues and expectations of professional practice.

An accelerated master's degree program leading to an M.S. in Materials Science is available. For specific program requirements refer to the Graduate College Catalogue.

No more than three grades of D, D+, or D- will be acceptable in all required courses in engineering, basic science, and computer science including all technical electives as stated in the catalogue for the junior and senior years.

Elective Concentration 1: General Electrical Engineering

FIRST YEAR	Fall	Spr
Chemistry 31, Intro Chemistry	4	-
HSS Electives ¹	3	-
ENG 1, Written Expression	3	-
ENGR 2, Graphical Communication	2	-
MATH 21, Calculus I	4	-
EE 1, First-Year Design Experience	-	2
HSS Electives ¹	-	6
MATH 22, Calculus II	-	4
PHYS 31/21, Intro Physics/Lab	-	5
	<u>16</u>	<u>17</u>

SOPHOMORE YEAR	Fall	Spr
EE 3, Linear Circuit Analysis I	3	-
EE 81, Linear Circuit Lab I	2	-
EE 131, Fund. of Digital Design	3	-
Math. 121, Calculus III	4	-
PHYS 42 and 22, Electromag Modern Physics	5	-
Math. 271, Applied Math/Engineers	-	3
HSS Elective ¹	-	3
EE 82, Linear Circuit Lab	-	2
EE 4, Linear Circuit Analysis II	-	3
CS 21 Computer Programming I	-	4
STAT 143/151 Statistics	-	3
	<u>17</u>	<u>18</u>

JUNIOR YEAR	Fall	Spr
EE 120, Electronics I	3	-
EE 163, Solid State Physical Electronics I	4	-
EE 171, Signals and Systems	4	-
EE 183, Electronics Laboratory I	2	-
HSS Elective ¹	3	-
EE 121, Electronics II	-	3
EE 164, Solid State Electronics II	-	3
EE 174, Intro. to Communication Systems ¹	-	3
EE 184, Electronics Laboratory II	-	2
PEAC, Physical Ed.	-	1
EE 134, Microprocessors ¹	-	4
	<u>16</u>	<u>16</u>

SENIOR YEAR	Fall	Spr
EE 141, Electromagnetic Field Theory	3	-
EE Senior Lab Elective ⁵ Elective ⁴	2	-
EE 187 Professional Design Issues	2	-
Non-EE Eng. Sci. Elective ²	3	-
EE Technical Elective ³	6	3
HSS Elective ¹	-	3
Tech Elective ⁵	-	3
EE 142 Electromag. Field Theory II	-	3
EE 188 Major Design Experience	-	2
Physical Educatio	-	1
	<u>16</u>	<u>15</u>

¹HSS Electives: Students must select one course from the list of approved race & culture courses.

²Non-EE Engr. Science Electives: CE 1, 10, 125, 150; ME 12, 40, 114.

³EE Technical Elective: EE 113, and all 200-level, 3 credit EE courses.

⁴EE Senior Lab Electives: EE 185, 186 or 289.

⁵EE Technical Electives³ or CS 26, 100, 101, 103, 104, 201, 222; PHYS 128; ME 14, 40, 114, 150; CE 125; CHEM 161; MATH 54, 124, 173; STAT 143, 151. All 200-level Math and S8.rurse56.98 0234161; M5xative

level, 3 credit EE course.

⁴EE/CS Technical Electives: EE Technical Elective³; any 100-level or higher CS course (except CS 148; note: CS 195 and 295 must have advisor approval).

⁵Non-EE Engr. Science Electives: CE 1, 10, 125, 150; ME 12, 40, 114.

Elective Concentration 3: Biomedical Engineering

FIRST-YEAR	Fall	Spr
CHEM 031, Introductory Chemistry	4	-
HSS Elective ¹	3	-
MATH 021, Calculus I	4	-
ENG 001, Written Expression	3	-
ENGR 002, Graphical Communication	2	-

MATH 22, Cal II	–	4
Physical Ed.	–	1
ME 1, Design Exp.	–	2
HSS Elective	3	3
PHYS 31/21, Physics Lab	–	5
	<u>16</u>	<u>15</u>
OPHOMORE YEAR	Fall	Spr
EC 11, Macroeconomics	3	–
MATH 121, Calculus III	4	–
ME 40, Thermodynamics	3	–
PHYS 42/22, Modern Physics	–	5
BSAD 60, Financial Acctng.	4	–
MATH 271, Applied Engr. Math.	–	3
ME 114, Intro. Mechanics	–	3
BSAD 61, Managerial Accounting	–	4
PEAC, Physical Ed.	1	–
ME 82, Mech. Engr. Lab I	–	3
	<u>15</u>	<u>18</u>
JUNIOR YEAR	Fall	Spr
ME 161, Manufacturing Engr. I	3	–
MATH 124, Linear Algebra	3	–
EC 12, Microeconomics	3	–
EE 100, EE Concepts I	4	–
BSAD 141, M.I.S.	3	–
CE 125, Engr. Econ.	–	3
ME 162, Manufacturing Engr. II	–	3
ME 171, Design of Elem.	–	3
STAT 143, Engr. Stat or 211, Stat. Methods	–	3
BSAD 173, Prod. & Oper. Analy.	–	3
	<u>16</u>	<u>15</u>
SENIOR YEAR	Fall	Spr
CE 150, Environmental Engr.	3	–
EMGT 185, Senior Project	3	–
HSS Elective	3	–
BSAD 178, Quality Control or Stat 224, Statistics for Qual. & Prod.	3	–
BSAD 270, Quant. Analysis or BSAD 272, Discrete Simulation	3	–
HSS Elective	–	3
CE Conc. Elective ¹	–	3-4
Engr. Mgmt. Elective ²	–	6
	<u>15</u>	<u>15</u>

¹CE Concentration electives: CE 141, 151, 161, 171, 172, 175, 180, 260, 261, and ME 40 with 44.

²Engineering Management Electives: BSAD 143, 144, 145, 168, 170, 174, 177, 192; and Statistics 221, 224, 225, 229, 231, 233, 237, 253; EMGT 175.

Mechanical Engineering

The curriculum in Mechanical Engineering leading to a degree of Bachelor of Science in Mechanical Engineering offers instruction in design, solid and fluid mechanics, materials, manufacturing processes and systems, as well as in engineering, life and physical sciences, humanities, and social sciences.

There are three options leading to the degree of Bachelor of Science in Mechanical Engineering: (1) General Mechanical Engineering (128 semester hours); (2) Biomedical Engineering (130 semester hours); (3) Premedical Engineering (136 semester hours). All options include two credits of required physical education activities.

Engineering design is developed and integrated in each student's program and culminates in a required major design experience which draws upon prior course work and which focuses on the issues and expectations of professional practice.

No more than three grades of D, D+, or D– will be acceptable

in all required courses in engineering, basic science, and computer science including all technical electives as stated in the Catalogue for the junior and senior years.

OPTION 1: Mechanical Engineering

FFIRST YEAR	Fall	Spr
CHEM 31, Intro. Chem. 4	4	–
ENG 1, Written Expression	3	–
ENGR 2, Graph Comm	2	–

SOPHOMORE YEAR	Fall	Spr
CE 1, Statics	3	-
MATH 121, Calculus III	4	-
HSS Elective ¹	3	-
ME 40, Thermodynamics	3	-
PHYS 42/22, Modern Physics	5	-
MATH 271, Appl. Engr. Math	-	3
ME 12, Dynamics	-	3
ME 14, Mechanics of Solids	-	3
ME 42, Engr. Thermodynamics	-	3
ME 82, Mech. Engr. Lab I	-	3
MATH 124, Linear Algebra	-	3
	<u>18</u>	<u>18</u>
UNIOR YEAR	Fall	Spr
ME 101, Materials	3	-
ME 143, Fluid Mech.	3	-
ME 123, 124, Lab II, III	2	2
MPBP 19 & 20, Human Anat. & Physiol.	4	4
EE 100, 101, Concepts I, II	4	4
ME 144, Heat Trans.	-	3
ME 171, Des. of Elem.	-	3
	<u>16</u>	<u>16</u>
SENIOR YEAR	Fall	Spr
ME 111, Systems Dynamics	3	-
ME 185, Sr. Project	3	-
ME 161, Manufacturing Engr. I	3	-

imum of 18 additional hours in Mathematics, Statistics, or Computer Science courses numbered 100 or above, of these 18 hours, 6 must be in Mathematics or Statistics, and 12 must be numbered 200 or above.

Allied fields include the following:

Twenty-four hours selected from the following Allied Fields:

- | | |
|--|-------------------------------------|
| (1) Physical Sciences | (6) Agricultural Sciences |
| (2) Biological Sciences | (7) Business Administration |
| (3) Medical Sciences | (8) Psychology |
| (4) Engineering | (9) Economics |
| (5) Computer Science
(26 or higher) | (10) Environmental Sciences/Studies |
| | (11) Natural Resources |

Each student in consultation with his or her advisor must plan a sequence of Allied Field courses consistent with his or her professional and personal goals. A student interested in pursuing intensive studies in an area not specifically listed is encouraged to plan a program with his or her advisor and submit it to the appropriate departmental committee for review and approval. The requirements are as follows:

Mathematics: Twenty-four hours selected from the above list of Allied Fields. Of these 24 hours, at least six must be in courses numbered 100 or above, and at least six must be taken in fields (1) to (5). Courses used to satisfy requirement A above may not be used to satisfy this requirement.

Statistics: Twenty-four hours selected from the above list of Allied Fields, including at least one laboratory experience in science or engineering. Of these 24 hours, at least six must be in courses numbered 100 or above and at least six must be taken in fields (1) to (5). Courses used to satisfy requirement A above may not be used to satisfy this requirement.

Applied and Interdisciplinary Mathematics: At least seven courses with a concentrated focus in an allied field. The major courses in requirement A and the Allied Field courses in requirement B must form a coherent program that has the written approval of the student's faculty advisor in the Mathematics and Statistics Department. When appropriate, and with the written approval of the advisor, at most three courses can overlap requirements A and B.

(Courses used to satisfy requirement B above may not be used to satisfy this requirement.)

English 1, and 21 hours of courses selected from categories I, II, and III listed below. These 21 hours must be distributed over at least two categories, and at least six hours must be taken in each of the two categories chosen. Statistics majors must include Speech 11.

I. **Language and Literature**

Chinese	Greek
Classics	Hebrew
English	Italian
French	Linguistics
General Literature	Russian
German	Spanish
	World Literature

II. **Fine Arts, Philosophy, and Religion**

Art	Religion
Film	Speech
Music	Theatre
Philosophy	

III. **Social Sciences**

Alana U.S. Ethnic Studies	History
Anthropology	Political Science
Area and International Studies	Psychology

Communication Sciences
Economics
Geography

Sociology
Vermont Studies
Women's Studies

A minimum of 120 semester hours is required, plus two hours in physical education activities. First-year students must include the one-hour Race and Culture course, EDSS or another course approved by the College of Arts & Sciences as meeting the "Race Relations and Ethnic Diversity in the United States" requirement.

No more than three grades of D, D+, or D- in the 200/300 level Mathematics and Statistics courses used to satisfy the "Core Curriculum" and "Major Courses" requirements will be acceptable.

Mathematics

The mathematics curriculum is quite flexible. It is designed to provide a sound basic training in mathematics that allows a student to experience the broad sweep of mathematical ideas and techniques, to utilize the computer in mathematics, and to develop an area of special interest in the mathematical sciences.

In addition to the Bachelor of Science degree described here, the Department of Mathematics and Statistics also offers a Bachelor of Arts degree in the College of Arts and Sciences. A faculty advisor from Mathematics will assist students in determining which degree program best suits their individual needs and plans. Some of the career plans for which a well-designed major in mathematics can provide ideal preparation are highlighted below.

In consultation with their advisor, students should choose an area of interest within the mathematics major and plan a coherent program that addresses their interests in mathematics and its applications. This area might be one of those listed

A Statistics Minor consists of 15 credits of statistics (STAT) courses, acquiring calculus knowledge equivalent to MATH 019 or 021, and gaining computer experience equivalent to STAT 201 or a computer programming course (CS 016 or higher or MATH 052). EC 170: Economic Methods can also be counted in place of STAT 111 or 141 as an introductory statistics course. Not more than two courses of introductory Statistics STAT 011/051/111/140/141/143/211 or EC 170 may be counted. The course plan for the Statistics Minor must be approved by a Statistics faculty advisor. See more complete guidelines at Statistics Minor Web site (www.cem.uvm.edu/math/grad/statistics.php). Note that Mathematics majors can minor in Statistics as well. In Arts and Sciences you must earn 12 of your 15 credits in statistics beyond any statistics courses counted in your major courses. In Engineering and Mathematical Sciences you must earn 15 credits in statistics beyond any statistics courses counted for your major.

Statistics majors may also minor in Mathematics by completing MATH 21, 22, 52 or 121, and 9 more credits in mathematics at the 100+ level. Since Statistics majors normally take MATH 21, 22, 121 and 124, they just need two more mathematics courses at the 100+ level.

Students may earn a double major in Mathematics and Statistics by meeting the requirements of the Statistics major and earning an additional 15 credits in Mathematics, to include MATH 52, and two of MATH 230, 237, 241, 251.

Further details on the Statistics major and minor curricula may be obtained from the Director of the Statistics Program. The Handbook for Mathematics and Statistics majors, available from the Mathematics and Statistics department office, also provides a wealth of useful information.

Premedical Concentration in Statistics. Each student electing the Premedical Concentration in Statistics will fulfill the general requirements for the Statistics major. Statistics 200 is recommended as an important elective for students interested in medicine or allied health. In addition, the

premedical concentration should include as a minimum two years of chemistry with laboratory (Chemistry 31, 32, or 35, 36, 37, 38, and 141, 142), at least one year of physics with laboratory (Physics 21, 31, 22, 42 or 21, 31, 125), and at least one year of biology with laboratory (Biology 1, 2). Exposure to medical research problems may be provided through supervised experiences in the College of Medicine Biometry Facility.

Concentration in Quality. Students interested in methods of quality control and quality improvement are encouraged to develop a concentration in quality. Regularly offered courses include Statistics 224 and related courses in Business Administration such as 178 and others in the Production and Operations Management and Quantitative Method areas. Project experience in industrial quality control or in health care quality can be gained in Statistics 191 and 281, or 293-294.

Accelerated Master's Programs. A master's degree in Mathematics, in Statistics or in Biostatistics can be earned in a shortened time by careful planning during the junior and senior years at UVM. For example, the M.S. could be earned in just one additional year, because six credits of undergraduate courses can also be counted concurrently towards the M.S. degree requirements. A student must declare his/her wish to enter the Accelerated Masters Program in Mathematics in writing to the department chair before the end of their sophomore year, and before they have taken MATH 241. They would apply to the Graduate College for admission, noting their interest in the accelerated Master's program. They can receive concurrent undergraduate and graduate credit for one or two courses, once admitted. Please refer to Section 13 of the Handbook for Graduate Studies in Mathematics (www.cems.uvm.edu/math/undergrad/handbook.pdf) for detailed information. Students should discuss the possibility of an accelerated master's program in Statistics or in Biostatistics with the statistics program director as soon as they think they may be interested in this program.

The College of Nursing and Health Sciences (CNHS) offers undergraduate and graduate programs in a variety of health care disciplines. The entry-level degree programs prepare the student for initial entry into clinical or laboratory practice and the pursuit of further education. The curricula include rigorous academic preparation and extensive field experience at selected facilities. The graduate programs prepare students for advanced practice in the health care disciplines and to assume leadership roles in practice, education, and research. The faculty of the CNHS is committed to excellence in teaching, the conduct of research that extends knowledge and contributes to the science of each discipline, and public service to improve the health care of citizens of state, national and global communities.

The following entry-level degree programs are offered: Bachelor of Science degree programs in Athletic Training, Exercise and Movement Science, Medical Laboratory Science; Nuclear Medicine Technology; Nursing; and Radiation Therapy. In Physical Therapy, an entry-level doctoral degree program is offered for post-baccalaureate applicants and for UVM undergraduate students in approved undergraduate majors. Nursing offers an entry level master's degree program for non-nurse college graduates. Graduates of the entry-level professional programs are eligible to sit for the appropriate licensure examination and enter practice or otherwise seek employment in the commercial/industrial sector. All of the professional programs needing accreditation and/or state approval for licensure eligibility have achieved and maintain such status. The Radiation Therapy program does not require accreditation and is not accredited at this time.

A non entry-level graduate program leading to a Master of Science degree is offered in Nursing (Advanced Practice Psychiatric-Mental Health, Clinical Systems Management, Advanced Community/Public Health Nursing, Primary Care Nursing, and an accelerated RN-BS-MS track). The Nursing graduate program is designed to enhance the clinical and/or academic background of licensed health care professionals and/or prepare them for advanced practice and research.

More information about the College, its mission and philosophy, faculty and programs can be found under the appropriate academic program headings on the UVM web site (<http://www.uvm.edu/>) and in the Graduate Catalogue.

The College consists of three departments: Medical Laboratory and Radiation Sciences; Nursing; and Rehabilitation and Movement Science.

Medical Laboratory and Radiation Sciences

Programs in the Department of Medical Laboratory and Radiation Sciences lead to Bachelor of Science degrees in Medical Laboratory Science, Nuclear Medicine Technology, and Radiation Therapy. A core curriculum of approximately 40 credit hours serves students in all three programs.

Graduates of all three programs are prepared for immediate employment, as well as to pursue post-baccalaureate education in the life sciences or professional education in medicine. Courses in the humanities and basic sciences are taken in the department and throughout the University, including the College of Medicine.

Requirements for admission are the same as the general University requirements, with the addition that applicants must have taken high school biology, mathematics through trigonometry, and chemistry; physics is highly recommended.

Bachelor of Science. A minimum of 128 semester credit hours including two credit hours of physical education, an overall grade-point average of 2.0, and a 2.0 GPA in professional courses are required for graduation in all four areas of study.

Departmental Honors. A student of at least junior standing whose minimum grade-point average is 3.5 is eligible for invitation by the faculty to participate in the departmental honors program. Students who accept the invitation will be required to complete one of the following options: (1) participation in at least two senior level specialty seminars with completion of an independent reading thesis; (2) completion of an independent research project. Excellent and committed work will be required for a student to be granted Departmental Honors.

MEDICAL LABORATORY SCIENCE:CLINICAL LABORATORY SCIENCE CONCENTRATION

The clinical laboratory scientist is involved in the development, performance, and evaluation of laboratory tests that lead to assessment of health status, diagnosis of disease, and monitoring of therapeutic treatment. The clinical laboratory experience is obtained at Fletcher Allen Health Care – Vermont's Academic Medical Center (FAHC) and the Vermont State Health Department Laboratories.

This four-year curriculum leading to the baccalaureate degree is accredited by the National Accrediting Agency for Clinical Laboratory Sciences. Upon consultation with an advisor, students may follow an individualized curriculum that can lead to certification in one of the clinical laboratory specialties (Microbiology, Chemistry, Hematology, or Immunology).

FIRST YEAR	Fall	Spr
CHEM 31 and 32	4	4
MLRS 1 First Year Seminar	1	–
MLRS 3 Medical Terminology	2	–
English	3	–
Math. (10 or 19 or higher)	3	–
EDSS 11, Race and Culture	1	0.7 h2[(MLRS.CoE4stbeToI4 TT]js0 -13923 MMath.2164 6c0 Tw[(English)-11con

munology).

SENIOR YEAR	Fall	Spr
MLS 222 Clinical Chemistry	4	-
MLS 255 Clinical Microbiology	4	-
MLS 295 Human Genetics	3	-
MLRS 110 Phlebotomy I	1	-
Electives	3	-
MLRS 244 Immunology Lab	1	-
MLS 272 MDS Practicum	-	16
MLRS 111 Phlebotomy II	-	1
	16	17
TOTAL CREDITS: 128		

Prepares students to work in public health laboratories at the state, federal and international level. The focus is on using microbiology, chemistry and molecular biology for public health (population-based) testing in support of epidemiology and to monitor health status and disease prevention strategies.

FIRST YEAR	Fall	Spr
CHEM 31/32 Introductory Chemistry	4	4
MLRS 1 First Year Seminar	1	-
MLRS 3 Medical Terminology	2	-
English 1 Written Expression	3	-
Math. (10 or 19 or higher)	3	-
EDSS 11, Race and Culture	1	-
Electives	3	6
CHEM 32 Introductory Chemistry	-	4
Physical Education	-	1
Statistics 141	-	3
MLRS 34 Human Blood Cell Biology	-	3
Total	17	17

SOPHOMORE YEAR	Fall	Spr
(CHEM 141/142 if Pre-Med)*	(4)	(4)
MLRS 123 Instrumental Analysis	4	-
Physical Education	1	-
Anatomy & Physiology 19/20	4	4
Electives	6	3
MLRS 54 Principles of Microbiology	-	4
CHEM 42 Organic Chemistry	-	4
Total	15	15

JUNIOR YEAR	Fall	Spr
(PHYS 11/12 if Pre-Med)	(4)	(4)
MLRS 281 Applied Molecular Biology	4	-
MLRS 295 Education & Management	3	-
BCOR 101 Genetics Lecture	3	-
BIOS 200 Biostatistics	3	-
PATH 101 Pathology	3	-
Electives	-	3
HLTH 120 Health Science Ethics	-	3
MMG 220 Env. Micro OR	-	3
PHRM 272 (Toxicology)	-	3
BIOC 212 Biochemistry of Human Disease	-	3
MLRS 242 Immunology Lecture	-	4
Total	16	16

SENIOR YEAR	Fall	Spr
MLS 222 Clinical Chemistry AND	4	-
NR 270 (Toxic Sub./Surface Water)	3	-
OR		
MLS 255 Clinical Microbiology AND	4	-
NFS 203 Food Micro	4	-
BIOL 254 Pop. Genetics	4	-
Electives	3	-
MLRS 244 Immunology lab	1	-
MLS 282 P.H. Practicum	-	17
Total	15-16	17
TOTAL CREDITS: 128		

* - Chemistry track students will take CHEM 141 and 142

NUCLEAR MEDICINE TECHNOLOGY This four-year curriculum leading to the baccalaureate degree is accredited by the Joint Review Committee on Educational Programs in Nuclear Medicine Technology. Nuclear medicine technology is the medical specialty concerned with the use of small amounts of radioactive materials for diagnosis, therapy, and research. Nuclear medicine uniquely provides information about both the structure and function of virtually every major organ system.

Clinical education takes place at our clinical affiliations. The initial experience is obtained at the Fletcher Allen Health Care (FAHC). The internship will be at an affiliation outside Burlington which will require additional room, meals and transportation expenses.

Students who already have the associate in science degree in Nuclear Medicine Technology are encouraged to apply for transfer into the program on a space available basis.

FIRST YEAR	Fall	Spr
MLRS 1 First Year Seminar	1	-
MLRS 3 Medical Terminology	2	-
CHEM 23	4	-
Race and Culture	1	-
English (preferably ENG 1)	3	-
Math. (10 or 19)	3	-
Physical Education	1	1
MLRS 34 Human Blood Cell Biology	-	3
Electives	-	6
CHEM 26 or 42	-	4
Psychology 1	-	3
	15	17

SOPHOMORE YEAR	Fall	Spr
MLRS 140 Intro. Radiologic Science	3	-
Statistics 111 or 141	3	-
ANPS 19-20 Anatomy & Physiology	4	4
Electives	6	9
NMT 151 Principles of Nuclear Med. Technology	-	3
	16	16

JUNIOR YEAR	Fall	Spr
HLTH 120 Health Care Ethics	3	-
MLRS 295 Princ. of Educ. & Mgmt.	3	-
NMT 152 Radiopharmaceuticals	3	-
NMT 163 Nuclear Med. Clinical Practicum I	1	-
Pathology 101	3	-
NMT 175 Medical Imaging	3	-
MLRS 110 / 111 Phlebotomy	1	1
Electives	-	3
MLRS 242 Immunology	-	3
NMT 153 Nuclear Med. Clin. Proc. I	-	3
NMT 155 Instrumentation I	-	3
NMT 164 Nuclear Med. Clinical Practicum II	-	2
	17	15

SENIOR YEAR	Fall	Spr
MLRS 289 Research Writing & Design	3	-
NMT 154 Procedures II	3	-
NMT 156 Instrumentation II	3	-
NMT 263 (Clinical Practicum III)	3	-
Electives	3	-
NMT 264 Nuclear Medicine Internship	-	17
	15	17

Clinical education takes place at one of our clinical affiliations. The initial experience is obtained at the Fletcher Allen Health Care (FAHC). At least one experience will be at an affiliation outside Burlington, which will require additional room, meals and transportation expenses.

CLINICAL AFFILIATIONS

Abnormal Psychology 152	-	3
Philosophy or Religion or Ethics	-	3
Physical Education	-	1
PRNU 50 First Year Nursing Seminar	<u>1</u>	=
	17/18	17

¹any sociology course under 100

²One of the following: ENVS 1, 2, or 7; ENSC 1 or 130; NR2 or NR 107/NH 107.

SOPHOMORE YEAR		
	Fall	Spr
Elective	3	-
Microbiology 65	4	-
Anatomy & Physiology 19-20	4	4
Fundamentals of Nutrition 43	3	-
Statistics 111 or 141	3	-
Professional Nursing 110	-	3
Professional Nursing 111	-	3
Professional Nursing 113	-	4
PEAC	=	<u>1</u>
	17	15

JUNIOR YEAR		
	Fall	Spr
NURS 120 Pathophysiology	3	-
Professional Nursing 127	3	-
Professional Nursing 128	4	-
Professional Nursing 129	4	-
Professional Nursing 130	2	-
Professional Nursing 131	-	3
Professional Nursing 132 or 235	-	5
Professional Nursing 134	-	6
Elective	=	<u>3</u>
	16	17

SENIOR YEAR		
	Fall	Spr
Professional Nursing 231	3	-
Professional Nursing 234	6	-
Professional Nursing 235 or 132	5	-
Elective	3	-
Professional Nursing 240	-	3
Professional Nursing 241	-	6
PRNU 244 Senior Practicum	=	<u>3</u>
	17	12

care services. The program is an RN-BS-MS accelerated program, with an option for students to “step out” after completion of the baccalaureate requirements with a B.S. degree. Separate application is required for the graduate program.

The baccalaureate nursing courses include:

	Hours
Professional Nursing 60	2
Professional Nursing 111	3
Professional Nursing 113	4
Professional Nursing 241	6
Professional Nursing 263	5
Graduate Nursing 301	3
Graduate Nursing 310	3
Graduate Nursing 315	3
Professional Nursing or NURS electives	6-7

The baccalaureate non-nursing courses include:

Quantitative Sciences	19
Environmental Studies Electives: ENVS 1, 2, 7 or ENSC 1 or 130 or NR 107/NH 107	3/4
Elements of Statistics 111 or 141	3
Human Development 5	3
Philosophy, Religion, or Ethics	3
English elective	3
Psychology elective	3
Sociology elective	3
General Education electives	18-19
Physical Education	2
Race and Culture course	3

Graduate Studies: Students interested in master’s preparation in nursing may obtain information on admission and requirements for the M.S. or Ph.D. in nursing at www.uvm.edu/~nursing

The Bachelor of Science degree with a major in nursing is awarded upon completion of a minimum of 128 credit hours (126 if the student is over 25 years of age) in full or part-time study. The major components of the curriculum are: required non-nursing courses, elective courses, and major nursing courses. Students must successfully achieve:

- 64 credit hours of major nursing courses;
- 52 credit hours of required non-nursing courses (50 if excluding the physical education requirement; and
- 12 credit hours of elective courses.

A three-credit “Race and Culture” course is required prior to graduation.

BS Program for Registered Nurses: The program for registered nurses has been designed in light of changes in the health care delivery system and to better serve the registered nurse returning to school. In this program, the Bachelor of Science degree with a major in nursing is awarded upon completion of a minimum of 126 credit hours (124 if the student is over 25 years of age) in full or part-time study. The major components of the curriculum are: required non-nursing courses, elective courses, and major nursing courses. The curriculum plan may vary for each student depending on the type and number of credits transferred to UVM. The focus of the baccalaureate program component is on health and health promotion for individuals, families, groups, and communities; and the factors that influence delivery of health

Doctor of Physical Therapy degree through the General Admission Option. This option generally requires application to the DPT program in the final year of undergraduate study, or sometime thereafter. Students in select undergraduate majors may follow an accelerated 3+3 model, completing their undergraduate degree requirements in three years and making application to the DPT program in their third year of undergraduate study. For students following a 4+3 model, the Graduate Record Exam is also required.

Post Baccalaureate Admission

Applicants who have already completed the baccalaureate, master or doctoral degree in other disciplines are encouraged to apply to the Doctor of Physical Therapy program. The total length of post baccalaureate study in the DPT program is three years.

Athletic Training Program

The purpose of the Athletic Training Education Program (ATEP) is to provide students the knowledge and practical skills to enter the profession of athletic training. Athletic Training is an academic major at UVM and provides students with an all-encompassing education fitting of a medical profession. The undergraduate program at the University of Vermont has been approved by the National Athletic Trainer's Association (NATA) since 1979 and is currently accredited by the Commission on Accreditation of Allied Health Education Programs (CAAHEP). It is designed to provide the undergraduate student with professional preparation and eligibility to sit for the National Athletic Trainer's Association Board of Certification (NATABOC) examination. Certified athletic trainers are highly trained medical professionals qualified to work in a number of settings to enhance the quality of health care for athletes and those engaged in physical activity. Working closely with physicians and other allied health professionals, their expertise includes the prevention, evaluation, management, and rehabilitation of injuries incurred by the physically active.

In addition to coursework, students are required to complete a minimum of 800 hours of clinical experience under the direct supervision of certified athletic trainers on campus and at local off-campus affiliate sites. The required 800 clinical experience hours is based upon three years in the program (second through fourth). First year students are required to participate in an introductory period of directed observation experience of 60 hours. During this time, the student becomes acquainted with the various daily duties and routines of the staff and athletic training students, the operations of the training room and basic athletic training skills. Once admitted to the ATEP, students are assigned to Approved Clinical Instructors. These assignments include team practice and game coverage, team travel, and sports therapy clinic coverage. Students also have the option of a number of other practical experiences during their final year including observing in surgery or emergency room, orthopedic research, emergency rescue squad runs, etc. Each student is evaluated at regular intervals and must demonstrate mastery of educational competencies to continue with the next assignment.

A typical, but not all-inclusive, program outline follows:

FIRST YEAR	Fall	Spr
MLRS 003 - Medical Terminology	1	Yhese asENG-0.0144 Ws1hv-0.0043 nlxudeTw(p)-582t.3-46417all- of other

Applicants must meet the general admission requirements for the University of Vermont. In addition, students must have one year of biology, one year of chemistry, four years of math, including trigonometry. One year of physics is strongly recommended. Students are expected to achieve a semester GPA of no less than 2.5, and maintain a cumulative GPA no less than 2.5 for graduation. In addition, students may receive no more than one grade of D or below in their major courses. This curriculum, conducted in four academic years, provides balance in general and professional education.

A typical, but not all-inclusive, program outline follows:

FIRST YEAR	Fall	Spr
NFS 43 Fundamentals of Nutrition	3	-
CHEM 23 Outline of General Chemistry	4	-
MATH 10 or higher	3	-
GEN ED	3	-
PEAC - Physical Education Activity Course	1	-
AT 157 - Care and Prevention of Athletic Injuries	-	3
CHEM 26 - Outline of Organic & Biochem	-	4
BIO 4 or higher	-	3-4
GEN ED	-	3
PEAC - Physical Education Activity Course	-	1
EDSS 11 - Race and Culture	=	1
Total	14	15-16
SOPHOMORE YEAR	Fall	Spr
ANPS 19 - Anatomy and Physiology I	4	-
EXMS 166 - Kinesiology and Biomechanics I	3	-
NFS 63 - Obesity, Weight Control & Fitness	3	-
GEN ED	3	-
Elective	3	-
ANPS 20 - Anatomy and Physiology II	-	4
EXMS 169 - Kinesiology and Biomechanics II	-	3
EXMS 168 - Measurement & Data Analysis in Exercise Science	-	3
GEN ED	-	3

Elective	=	3
Total	16	16
JUNIOR YEAR	Fall	Spr
EXMS 269 - Exercise Physiology	4	-
EDPE 220 - Sport in Society	3	-
EXMS 260 - Adapted Physical Activity Across the Lifespan	3	-
GEN ED	3	-
EXMS 271 - Practicum I	3	-
CNHS 150 - Ethics and Advocacy in Health Care	2	-
EXMS 265 - Research Methods in Exercise Science	-	3
EXMS 240 - Motor Learning and Performance	-	3
NFS 163 - Sports Nutrition	-	3
GEN ED	-	3
Elective	-	3
EDPE 261 - Physiologic Changes and Performance with Aging	=	3
Total	18	18
SENIOR YEAR	Fall	Spr
EXMS 242 - Exercise and Sport Psychology	3	-
EXMS 266 - Exercise Prescription for Sport, Health & Fitness	3	-
Option A/B	3	-
Elective	3	-
EXMS 243 - Leadership in Exercise and Sport	3	-
EXMS 197 - Senior Research	-	3
EXMS 272 - Practicum II	-	3
Option A/B	-	3
Elective	-	3
CNHS 152 - Personal Health/Health Promotion & Health Behaviors	=	3
Total	15	15
Total Credits 128		

The School of Business Administration at The University of Vermont prepares students for careers in management in a dynamic global economy and fosters recognition of the importance of ethical, social, and environmental responsibility. The School cultivates and supports a Faculty that excels in management education, research, and practice. The School also commits itself to a special obligation to serve the citizens of Vermont. It strives to be the best business program of its size.

The School contributes to the mission of the University by pursuing seven objectives:

1. To become nationally known for excellence in undergraduate education that integrates forward-looking professional studies with rigorous studies in the liberal arts and sciences by graduating bachelors' candidates who:
 - know how to think critically, learn independently, and search for and integrate new information;
 - understand what managers do, how businesses operate, and how markets behave;
 - understand how knowledge is created;
 - use knowledge, creative abilities, and analytical skills to frame and solve management problems;
 - have strong communication skills;
 - use information technologies to improve individual and organizational performance;
 - have a sense of history, familiarity with the great world literature and an understanding of global economic, political and technological developments;
 - appreciate the diversity of cultures, values, and ideas.
2. To offer a high quality MBA degree that serves in-career, part-time students and their employers in the Vermont region as well as select full-time students. Graduate MBA candidates who are able to build on previous educational and professional experiences in developing knowledge to address significant management issues of the whole organization as well as the functional parts.
3. To provide students with an environment that fosters intellectual and professional development through academic and career advising.
4. To recruit, retain, reward and reinforce the continuing scholarly and professional development of a faculty and staff that achieves high standards of quality, innovation and productivity in teaching, research and service.
5. To engage in research and publication that enhance the scholarly reputation of the University and enrich the School's educational programs.
6. To conduct public service programs that increase the intellectual capital and leadership capabilities of Vermont's and the nation's business, public sector and not-for-profit organizations.
7. To develop and strengthen cooperative relationships and programs with other colleges, schools and departments at The University of Vermont, that capitalize on institutional strengths and resources to advance the mission of the University.

During their first two years, students build the conceptual and analytical base for studying the art and science of management. They partially complete general education requirements and learn required skills for upper level business courses. Students take business field courses and business discipline concentration courses in their junior and senior years.

The School of Business Administration cooperates with the College of Engineering and Mathematical Sciences in offering a B.S. in Engineering Management.

The undergraduate and graduate programs offered by the

A student may appeal a dismissal in writing to the Undergraduate Studies Committee within the time frame stipulated in the dismissal letter if there are circumstances supporting an extension of trial status. Detailed information on the criteria for dismissal may be obtained from the School of Business Student Services Office.

Basic Business Core

(24-26) credit hours)

To be completed by the end of the sophomore year with a grade-point average of 2.0.

Math 19 and 20; or Math 21
Economics 11 and 12
Statistics 141
BSAD 40, 60, 61

Business Field Courses

(24 credit hours)

To be completed beginning junior year, with a grade-point average of at least 2.0.

Quantitative Methods, BSAD 120, 132, 141, 150, 173, 180, 191. Students must have junior status and have completed the Basic Business Core before taking Business Field courses.

The Quantitative Methods course is selected from among BSAD 170, 174, 177, 178, 266, 270, 272; EC 270, or Statistics 151, 195, 201, 221, 223, 224, 225, 231, 233, 237 or 253.

BSAD 191 is taken in the senior year.

Business Discipline Concentration

(at least 12 credits)

To be completed with a grade point average of at least 2.0

The student must complete at least 12 hours in Business Administration courses numbered 100 or above beyond those required for the Business Field courses. One approach is to concentrate these courses in one of the areas of Accounting, Entrepreneurship, Finance, Human Resource Management, Management and the Environment, Management Information Systems, Marketing, International Management, or Productions and Operations Management. Students may also complete a self-designed program.

The specific requirements for each Discipline Concentration are available from the Student Services Office in 101 Kalkin Hall. A faculty member teaching in the discipline of the concentration must approve any exception to these requirements.

RACE AND ETHNIC DIVERSITY

(3 credit hours)

Students must complete one three-credit course that addresses the question of race relations and ethnic diversity in the U.S. Courses that fill this requirement are approved by the College of Arts and Sciences. The course selected to satisfy this requirement may also be used to fulfill another general education requirement. Otherwise, an elective course must be used to meet the requirement.

Physical Education (2 credit hours)

All students are required to complete two credits in Physical Education Activities Courses (PEAC). No more than two credits will count toward the 122 hours required for graduation. Students who enter the University at age 25 or older may waive the two credits of PEAC.

Electives

General Education Electives

Students will take additional courses in subjects so that at least half of their course work is outside of Business Administration and Upper-level (100 level or above) Economics.

Other Electives

Students take additional electives, either inside or outside of Business to achieve the total 122 credit hours required for their degree.

Restrictions on Electives

1. No credit will be granted for a course that is assumed prerequisite knowledge for a course previously completed.
2. No credit will be granted for a course that substantially duplicates material in courses offered in Business Administration or in other previously completed courses.
3. Only two credits of PEAC will count towards the required 122 credits.

Here is *one* illustrative schedule for the program.
(Numbers shown are credit hours.)

	Fall	Spring
FIRST YEAR		
MATH 19, 20	3	3
EC 11, 12	3	3
BSAD 40	3	–
General Education Courses	<u>6–7</u>	<u>9–10</u>
	15–16	15–16
SOPHOMORE YEAR		
BSAD 60, 61	4	4
STAT 141	–	3
General Education Courses	<u>12–13</u>	<u>9–10</u>
	16–17	16–17
JUNIOR YEAR		
Business Field Courses	9	9
General Education or Electives	<u>6</u>	<u>6</u>
	15	15
SENIOR YEAR		
Business Field Courses	3	–
BSAD 191, Business Policy	–	3
Business Discipline Concentration Courses	6	6
General Education or Electives	<u>6</u>	<u>6</u>
	15	15

Professional Accounting Program

Students planning to sit for the CPA examination should

complete the Professional Accounting Program: BSAD 17, 18, 161, 162, 164, 168, 266, 267. Completion of the Professional Accounting Program satisfies the Business Discipline Concentration requirement. BSAD 266 may be used to satisfy both the Quantitative Methods requirement and the Professional Accounting Program requirement.

Completion of the professional accounting program fulfills the academic requirements to sit for the CPA examination in the State of Vermont. The requirements to sit for the CPA examination vary among states, therefore students who plan to sit for the examination in a state other than Vermont are advised to contact the state's Board of Accountancy to obtain current requirements. See <http://www.aicpa.org> for addresses and additional information.

International Management

Students interested in International Management are expected to spend the spring semester of their junior year studying abroad.

The University participates in a number of exchange programs with institutions around the world.

It is also possible for students to spend a semester at other international universities. It is recommended that International Management students complete BSAD 120, 150, and 180 before going abroad.

Preprofessional Work Programs

Students are encouraged to participate in preprofessional work opportunities. These opportunities include internships and cooperative education (CO-OP) programs. For both of these programs students must first successfully complete the t(St0.00su.P3 Tchms gh Cc0entSPcternaf fonts -ds requirement an Studetak0.claww.ait for uiveend a semester at oth1in

In The Rubenstein School of Environment and Natural Resources (RSENR), excitement for discovery and a commitment to life-long learning are central. Our emphasis on the integration of natural science and cultural perspectives reflects the interdisciplinary context in which ecosystem management, resource planning, and environmental concerns

⁶Currently can be fulfilled with either FOR 234–Forest Pathology or PSS 107–Forest Entomology.

Natural Resources – Resource Planning

The Resource Planning curriculum explores interactions among individuals, communities, and society with nature, resources, and the environment. It allows students to select courses around specific individual interests such as natural resource planning and community, policy and economic dimensions of resource planning, and international dimensions of resource planning.

A total of 122 credits are required for the degree.

Required courses: PSYC 1, 104, 130, 161; CDAE 2 or ENVS 2; POLS 21 or 41; SOC 1 or 11; PHIL 4, ENVS 178 or CDAE 156; ANTH 21 or GEOG 1; EC 11 or 12 or CDAE 61. 27 additional credits in Option Electives to be chosen from approved list in consultation with student's academic advisor. Any course substitution request should be approved **prior to the end of the add/drop period** for the semester in which the student enrolls in the substitute course.

Natural Resources – Resource Ecology

The Resource Ecology curriculum explores the biology and ecology of plants and animals in both aquatic and terrestrial systems and allows students to select courses around specific individual interests.

A total of 122 credits are required for the degree.

Required courses: BIOL 1,2; GEOL 1 or PSS 161; *MATH 19; *NR 140; CHEM 23 or CHEM 31,32; CHEM 26 or CHEM 42 or CHEM 141,142; NR 25; NR 143 or FOR 146; 27 additional credits in Option Electives to be chosen from approved list in consultation with student's academic advisor. Any course substitution request should be approved **prior the end of the add/drop period** for the semester in which the student enrolls in the substitute course.

* Also fulfills RSENR general education requirement.

Natural Resources – Individualized Program of Study

Integrated Natural Resources (INR) is a self-designed major. INR is the right choice for students who have strong interests in natural resources and the environment, clear academic direction, and the motivation to develop a well-focused, personally meaningful course of study. Working closely with a faculty advisor, the student builds on a solid foundation of natural resources courses to create an individualized program that combines course work from disciplines within and outside the School.

A total of 122 credits are required for the degree.

Required courses (minimum nine credits): Students elect from a list of approved courses at least one course in each of three areas - *biology/ecology*; *NR courses in social sciences and communications*; and *quantitative and analytical methods*. These courses are in addition to those taken to fulfill RSENR general education requirements.

Individualized Program of Study Option (minimum 39 credits); The student develops an individualized Program of Study composed primarily of intermediate-level, Rubenstein School of Environment and Natural Resource courses (ENVS, ENSC, FOR, NR, RM or WFB prefix). This may include no more than 15 credits outside the School and no more than 6 credits below the 100-level. With careful selection of courses, students develop concentrations such as **Environmental Education, Resource Management, Resource Conservation, International Resource Issues**, and **Spatial Analysis of Natural Resources**. All programs of study must be endorsed by the advisor, then

Courses of Instruction

The University reserves the right to change course offerings at any time.

A student who lacks the stated prerequisites for a course may be permitted to enroll by the instructor. Such students must inform the instructor that they lack the prerequisites, and the instructor will make appropriate efforts to ascertain that they are properly qualified.

Courses are divided into three levels: introductory, intermediate, and advanced. Where appropriate, a department may limit enrollment in a particular course. Such limitations, other than class size, must be explicitly stated.

Courses numbered from 1-99 are introductory courses. Introductory courses emphasize basic concepts of the discipline. In general, they presuppose no previous college work in the subject. The only exceptions to this rule are those cases in which there is a two-semester introductory sequence. In such cases, the second semester course may have the first semester course as a prerequisite.

Courses numbered from 100-199 are intermediate courses. An intermediate course covers more advanced material than that treated in introductory courses. Students will be expected to be familiar with the basic concepts of the subject and the course will present more difficult ideas. Intermediate courses will generally be more specialized than introductory courses. An intermediate course will always have a minimum prerequisite of three hours prior study in the discipline or in another specified discipline.

Courses numbered from 200-299 are advanced courses. An advanced course presents concepts, results, or arguments which are only accessible to students who have taken courses in the discipline (or, occasionally, in a related discipline) at the introductory and intermediate levels. Prior acquaintance with the basic concepts of the subject and with some special areas of the subject will be assumed. An advanced course will always have a minimum prerequisite of three hours prior study at the intermediate level in the discipline, or in a related discipline, or some specified equivalent preparation.

010 Introductory Biochemistry

191 Biochemistry of Nucleic Acids Structure, function, and properties of nucleic acids, nucleoproteins, and enzymes or proteins that act on nucleic acids. Emphasis on experimental approach. *Prerequisite:* 10 or equivalent or instructor's permission. Alternate years, 2000-01.

195 Special Topics *Prerequisite:* Instructor's permission.

197, 198 Undergraduate Research *Prerequisite:* Departmental permission.

201 General Biochemistry Broad coverage of biochemistry including principles of analytical biochemistry. *Prerequisite:* Chemistry 42 or 141. Three hours and lab (one hour) as AGBI 202.

202 General Biochemistry Lab Introduction to techniques and equipment used for the isolation and quantitative analysis of amino acids, proteins, carbohydrates and DNA enzymes in biological materials. *Prerequisite:* Credit for or concurrent enrollment in 201.

210 Quantitative Biochemistry Physical principles of biochemical methods and theory with strong emphasis on problem solving and data analysis. *Prerequisite:* 201.

220 Molecular Biology Structure and biological function of nucleic acids, proteins, and enzymes. Emphasis on optical, electrophoretic, and ultracentrifugal methods. *Prerequisite:* 201 and 202 or instructor's permission.

221 Molecular Biology Lab Laboratory practice in protein characterization by disc electrophoresis and isoelectric focusing. DNA separation and characterization by agarose gel electrophoresis, restriction digests, polymerase chain reaction, and Southern blots. *Prerequisite:* Credit for or concurrent enrollment in 220.

230 Advanced Biochemistry Study of metabolic cycles emphasizing research methods involving radioisotopes and chromatography. *Prerequisite:* 201 and 202 or 220 and 221 or instructor's permission.

231 Advanced Biochemistry Lab Laboratory experimentation emphasizing chromatography. Introduction to modern GLC and HPLC techniques, protein secondary structures, and enzyme isolation, purification, and characterization. *Prerequisite:* Credit for or concurrent enrollment in 230.

250 Plant Biochemistry Study of specific biochemical

principles unique to plants concentrating on the biochemistry of plant cell walls, photosynthesis, and secondary metabolites. *Prerequisite:* 201. Alternate years, 2001-02.

295 Special Topics *Prerequisite:* Instructor's permission.

001 Foundations:Communication Meth Foundational course to acclimate CALS First-Year students to college life and develop individual and group public speaking skills through giving and critically analyzing presentations.

002 Foundation:Information Tech Foundational course to acclimate CALS First-Year students to college life and develop information technology skills through use of computer hardware and software and internet applications.

085 Computer Applications Use of computer operating systems programming languages, electronic communications, word processing, spreadsheet modeling and graphics, and internet software related to the agricultural and life sciences.

095 Introductory Special Topics

096 Special Topics

125 Teaching Assistant Development TA's develop skills in areas of leadership, group dynamics, interpersonal effectiveness, and assertiveness as group facilitators in Beginnings course. *Prerequisite:* Sophomore standing, permission.

183 Communication Methods Introduction to informational and persuasiveting on the bioche09261a.017.lolo,190125 0.12

093 So Africa:Politic/Race&Culture An interdisciplinary introduction analyzing the forces that led to creation of that system of government known as Apartheid. Assessment of strategies and tactics of change.

095, 096 Introductory Special Topics See Schedule of Courses for specific titles.

191, 192 Internships Approved programs of learning outside the classroom. Internships must be undertaken directly in the field and involve activity in which substantive learning about the program area can take place.

195, 196 Intermediate Special Topics See Schedule of Courses for specific titles.

197, 198 Readings & Research

291 European Studies Seminar Multidisciplinary study of Europe as a geocultural area primarily for European Studies majors. Content will vary by instructor from departments including, for example, Classics, History, Political Science. *Prerequisite:* Permission of instructor.

295, 296 Advanced Special Topics See Schedule of Courses for specific titles. *Prerequisite:* Permission by Executive Committee of International Studies. Other area courses offered by individual academic departments.

297, 298 Advanced Readings & Research Independent study of a specific area subject or theme with an approved instructor. *Prerequisites:* Junior/senior standing, and permission of area Program Director.

051 Intr to ALANA US Ethnic Studies Survey of the experience of ALANA peoples in the U.S. as well as a theoretical analysis of issues of race, culture, gender, and diverse traditions in the American multicultural setting.

055 Racism and American Culture

representation, sociocultural diversity, social change, historical interactions, and cultural comparison. *Prerequisite:* Anth 21
160 North American Indians Ethnographic survey of major native American cultures of Mesoamerica and the U.S.

297, 298 Advanced Readings & Research *Prerequisite:*
Junior or senior standing.

005 Western Art:Ancient - Medieval Introduction to the visual arts, primarily painting, sculpture, and architecture in the Western world from prehistoric through Gothic.

006 Western Art:Renaissance-Modern Introduction to the visual arts, primarily painting, sculpture, and architecture in the Western World from Renaissance to present.
Prerequisite: It is recommended that ARTH 5 be taken before 6.

003 Three-Dimensional Studies Introductory study of the manipulation of actual space in diverse media. Emphasis varies with instructor.

004 Intro to Film/Video Production Introductory study of the principles and properties of four-dimensional media, including the mechanical and electronic phenomena behind the creation of a moving image.

011 Introduction to Fine Metals Emphasizes design in the third dimension. Basic metal fabrication techniques, soldering, forming, forging, fusing, and casting. Drawing required. Fall semester only.

095 Introduction to Special Topics See Schedule of Courses for specific titles.

111 Fine Metals Continuation of three-dimensional fabrication with work in chasing, repousse, casting, stone setting and more complex methods of construction. Design and drawing required. *Prerequisite:* 11. Fall semester only.

113 Clay: Hand Building Investigation of surfaces and three-dimensional forms. Focus on variety of construction methods, surface treatment, and firing techniques. Related clay and glaze technology. *Prerequisites:* 1 or 2, and 3.

114 Clay: Wheel Throwing Development of throwing skills and the capacity to create a range of forms. Investigation of surface treatment techniques such as slip painting and glazing. Low-fire and stoneware firing. Related clay and glaze technology. *Prerequisites:* 1 or 2, and 3.

115 Intermediate Drawing Intense investigation of drawing and elements related to the discipline. The figure used to introduce drawing exercises dealing with contour, gesture, color, and compositional geometry. *Prerequisite:* 1 and 2.

116 Drawing From the Figure Drawing from the model, emphasizing in-depth studies in different media. *Prerequisite:* 1 and 2.

121 Painting Painting as an investigation of color, space and visual perception using traditional motifs and exploring individually developed directions. *Prerequisites:* 1 and 2.

131 Printmaking: Etching Basic procedures in zinc plate printing, stressing design and technical control of aquatint, etching, drypoint and embossment. *Prerequisites:* 1 and 2. Offered alternate semesters.

132 Printmaking: Silkscreen Basic procedures in stencil printing, stressing design and technical control of stencil cutting, glue and tusche resist and photo-silkscreening. *Prerequisites:* 1 and 2. Offered alternate semesters.

133 Printmaking: Lithography Basic procedures in planographic printing from stone, stressing design and technical competence. Intensity of investigation varies with individual student. *Prerequisites:* 1 and 2.

137 Photography Photographic processes as methods of seeing, emphasizing visual discovery through informed manipulation of materials. Students explore light, camera, photosensitive materials relating to photographic realities. *Prerequisite:* one of the following: 1, 2, 4.

138 Color Photography Exploration of color films, cameras, and color printing processes as a means for recording, enhancing and expressing students' subjective experiences. *Prerequisite:* one of the following: 1, 2, 4.

139 Animation Techniques of single frame filmmaking, including drawing on film, producing a flipbook, animating a repetitive form, a two-dimensional sequence, and a three-dimensional sequence. *Prerequisite:* any two of the following: 1, 2, 3, 4.

141 Sculpture Exploration of manipulative materials. *Prerequisite:* 3.

142 Art from Scraps Students explore in a series of projects how discarded objects and material from everyday life, the "found object" tradition, can become materials for sculpture. *Prerequisite:* 2 and 3.

143 Intermed Film/Video Production Exploration of the principles and properties of sound and moving image through projects in synchronous sound filmmaking and live studio production. *Prerequisite:* 4 and either 1, 2, or 3, or

instructor permission.

144 Digital Art Exploration of the computer as an artistic medium, focusing on a variety of approaches for creating and displaying imagery. *Prerequisite:* 2.

145 Graphic Design The application of graphic design principles to practical problems, including the impact of popular design on society, and the exploration of visual elements in contemporary printing processes. *Prerequisite:* 1 or 2.

147 Visual Environment Exploration of public spaces, structures, architectural detail, landscaping, roadways, lighting, etc. Field trips; meeting with planners and architects; projects. *Prerequisites:* 1, 2, or 3.

191 Internship: Field Experience *Prerequisites:* junior standing, six hours of 100 level courses in appropriate field, departmental permission (a contract must be obtained from and returned to the Department of Art during preregistration).

195 Intermediate Special Topics Intermediate course or seminars on topics beyond the scope of existing department offerings. See Schedule of Courses for specific titles.

197 Rds&Rsch: Tutorial in Studio Independent/individual research in studio art. *Prerequisites:* junior standing, six hours of studio art courses at 100 level, departmental permission (a contract must be obtained from and returned to the Department of Art during preregistration).

213 Advanced Ceramics Advanced investigations of methods exploring content, form, surface, and color of ceramics and elements related to the discipline. *Prerequisite:* 113 or 114.

215 Advanced Drawing Intense investigations of drawing and elements that relate to that discipline. Emphasis on conceptual method, contemporary techniques, and both objective and non-objective source material. *Prerequisite:* 115 or 116.

221 Advanced Painting Advanced explorations of painting emphasizing issues of scale, materials, and techniques both traditional and contemporary, and their relationship to both the discipline and current issues. *Prerequisites:* 121.

237 Advanced Photography Continuation of 137, further exploring the implications of photography and encouraging students to use the medium to better understand their relationship to the world. *Prerequisites:* 137 or 138.

241 Advanced Sculpture Advanced investigation of sculpture. Students work on individual projects under supervision of instructor. Periodic group discussion and analyses of work in progress. *Prerequisite:* 141

244 Advanced Digital Art Advanced exploration of the computer as an artistic medium for creating imagery. Focus on using the computer to animate images and integrate sound. Emphasis on conceptual issues in digital art. *Prerequisite:* 144.

281 Advanced Studies in Studio Art Work in close consultation with faculty sponsor on a specific and advanced project. *Prerequisite:* senior standing, major or qualified minor in studio art, departmental permission (a contract must be obtained from and returned to the Department of Art during preregistration), six hours of 100-level courses in topic of contract.

283 Advanced Seminar in Studio Art Advanced seminar for senior studio art majors covering a range of topics. *Prerequisites:* senior standing, major in studio art, instructor's permission. (students to use the medium t0 TD0.014 Th objearD0.0Scu(Adv
244 Advm for creat0object. objearD0.0S T*-0.0 Tf421172e0ed .uctor'ar

ior, animal disease, and biotechnology.

004 Dairy Cattle Judging Principles of dairy cattle judging demonstrated and practiced using live animals.

006 Companion Animal Care & Mgmt Scientific principles of nutrition, breeding, and selection, health, management practices, pet therapy, and animal bonding. Primary emphasis on cat and dog.

043 Fundamentals of Nutrition Comprehensive study of specific nutrients in terms of their availability, function, and utilization in mammalian species.

statistics course, and permission. (Not offered for graduate credit.)

234 Advanced Dairy Management An intensive, residential program at the Miner Institute providing an in-depth experiential program in the management of the dairy herd. *Prerequisites:* ASCI 110, 134 or 135 or equivalents. Fifteen hours. (Not offered for graduate credit.)

252 FARMS Senior Project The students will conduct independent research focused on a project proposal that was developed and approved in previous course work (ASCI 156). *Prerequisites:* FARMS Program enrollment, ASCI 156.

263 Clin Top: Companion Animal Med The use of case studies in companion animal medicine to develop clinical, analytical, and diagnostic skills. *Prerequisites:* ASCI 118, 141, junior standing.

264 Clin Topics: Livestock Medicine An advanced study of diseases in cattle, sheep, goats, and pigs, emphasizing disease detection, pathobiology, treatment and prevention. *Prerequisites:* ASCI 118, 141, junior standing.

272 Adv Top: Zoo, Exotic, Endang Spec An exploration of modern zoo philosophy and ethics and the extent of human intervention necessary for the preservation of endangered species. *0.0176 Terequisites:*

isms; uni- and multi-cellular energetics; evolution of respiration and metabolism ; and the genetic code. Credit not given for both BCOR 011 and BIOL 001. *Pre/Co-requisites*: Concurrent enrollment or credit in Chemistry 31 or 32.

101 Genetics The basis of inheritance, covering topics from classical genetics to modern molecular studies. Analysis of genetic data emphasized, from prokaryotic, animal, and plant systems. *Pre/Co-requisites*: Biol 1,2 or BCOR 11,12, Chemistry 31,32, organic chemistry recommended.

102 Ecology and Evolution Ecosystem and community structure; population growth; species interactions and niche dynamics; population and chromosomal genetics; speciation in fossil records; ecology of animal behavior; applied ecology. *Pre/Co-requisites*: Biol 1,2 or BCOR 11,12, Math 19 or 21.

103 Molecular and Cell Biology Explores the fundamental processes of life. Topics include cellular metabolism; structure and function of organelles; cell cycle; signal transduction; biology of cancer. *Pre/Co-requisites*: Biol 1,2 or BCOR 11,12, Chemistry 31, 32 (Chemistry 141, BCOR 101 recommended).

191, 192 Undergraduate Research Participation in a

tical principles, and methodology for parameter estimation and hypothesis testing. *Pre/Co-requisites:* 151 or 153 or 251; 141 or equivalent; Math 121. Cross-listed: STAT 241

261 Statistical Theory I Point and interval estimation, hypothesis testing, and decision theory. Application of general statistical principles to areas such as nonparametric tests, sequential analysis, and linear models. *Pre/Co-requisites:* STAT 251 or either STAT 151 or STAT 153 with instructor permission. Cross-listed: STAT 261

282 Research Methods Laboratory focused course covering methods of eukaryotic cell culture, viability studies, and protein isolation and analysis.

287 Research I Independent research project - fall semester.

288 Research II Independent research project - spring semester.

293 Integrated Product Development (Cross-listed with Mechanical Engineering 265, Statistics 265.) Project-based course focusing on the entire product life cycle. Team dynamics, process and product design, quality, materials, management, and environmentally-conscious manufacturing. *Prerequisite:* Senior standing.

295 Special Topics Advanced courses on topics beyond the scope of existing departmental offerings. See Schedule of

- 169 Small Business Computer Appl** Using the micro-computer to accomplish tasks specific to small businesses. One credit module may include spreadsheets, databases, presentations, mapping markets, WWW, project management and local area networks. *Prerequisites:* 85 or equivalent. One to six hours.
- 170 Solar Strategies Bldg Constrct** Passive, active, and hybrid heating; photovoltaic electric systems. Physical principles, site evaluation, component and system analysis, materials selection, and design of low-cost systems. *Prerequisite:* Math 10 or permission.
- 171 Community&Int'l Econ Transform** Models of economic development, including constraints to economic transformation and policy approaches and strategies for promoting social welfare and sustainable development. *Prerequisites:* 2,61 or equivalent.
- 175 Farm Credit Fellowship Prac/Sem** Acquaints students who have a strong interest in farm management and farm finance with financial intermediaries serving agriculture. *Prerequisites:* 167.
- 180 Real Estate Appraisal** Basic concepts and methods of measuring real estate values. *Prerequisites:* 61 or equivalent, or instructor's permission.
- 191 Special Problems** Independent projects under direction of a faculty member. Includes undergraduate teaching assistance. 291 number for juniors and seniors only. *Prerequisites:* Permission. One to six hours (maximum).
- 195 Special Topics** Lectures or readings on contemporary issues in Community Development and Applied Economics. Enrollment may be more than once, up to 12 hours.
- 196 Field Experience/Practicum** Professionally-oriented field experience under joint supervision by faculty and business or community representative. Total credit toward graduation in 196 and 296 cannot exceed 15 hours. *Prerequisites:* Permission. One to 15 hours.
- 205 Rural Comm in Modern Society** The changing structure and dynamics of rural social organization in context of modernization and urbanization. Emphasis on rural communities in the U.S. *Prerequisite:* Six hours of sociology.
- 207 Markets, Food & Consumers** Learn how producers, processors, wholesalers, cooperatives, retailers, consumers, and governments affect the movement of food and fiber products through the production-marketing chain. *Prerequisite:* 61 or equivalent.
- 208 Agricultural Policy and Ethics** An examination of American agriculture and policies from various perspectives - historical, political, ecological, technological, social, economic, and ethical. Emphasis on contemporary issues, policy options, and future development. *Prerequisites:* 61 or equivalent, permission. Fall.
- 210 Small Bus Mktg & Entrepreneur** Students learn through participation in a series of guest lectures and field trips, the challenges, opportunities, and strategies faced and employed by small business entrepreneurs in the area of marketing. *Prerequisite:* 168 or 207. Spring. (Not offered for graduate credit.)
- 218 Community Ldrshp, Org&Inst Dev** Role of civic engagement, leadership, and social and political institutions in a community development context. Special attention given to problems of formulation and implementation of alternative change strategies. *Prerequisites:* Jr standing, CDAE 102, or permission.
- 231 Applied Computer Graphics** Directed research, planning, design, technical experimentation, production and evaluation for computer-generated design application. *Prerequisite:* 15 or permission. (Not offered for graduate credit.)
- 237 Economics of Sustainability** Economic analysis that integrates natural resource and community planning for sustainable development at local, national and international levels. Examples include land use, sustainable agriculture and green business. *Prerequisites:* 61 or equivalent, or permission.
- 250 Applied Research Methods** Methods used in the collection and analysis of qualitative and quantitative data. Critical review of literature, and data collection, analysis, and interpretation for descriptive, inferential, and evaluation research. *Prerequisites:* Statistics 141 or permission. UG only.
- 251 Contemp Policy Iss:Comm Devel** In-depth study of contemporary community development policy issues such as affordable housing, land use and sprawl, alternative energy, environmental sustainability, effective community planning, social and environmentally responsible business. *Prerequisites:* CDAE 102 or permission. UG only.
- 253 Macroeconomics for Appl Econ** Explore macroeconomic principles and concepts as they affect individuals and businesses in local, regional, national, and global economics. *Prerequisites:* Economics 11, and CDAE 61 or equivalent.
- 254 Microeconomics for Appl Econ** The study of economic choices of individuals and firms, and the analysis of competitive and noncompetitive markets. Emphasis on appli-

problem under direction of a staff member. Findings submitted in written form as prescribed by the department. *Prerequisites:* Senior standing.

298 Undergraduate Research Work on a research problem under direction of a staff member. Findings submitted in written form as prescribed by the department. *Prerequisites:* Senior standing.

001 Statics Fundamentals of statics; composition and resolution of forces; the analysis of force systems in two and three dimensions; and centroids and moments of inertia. *Prerequisite:* Math. 22.

002 CE Graphic Design Computer-aided and hand generation of: geometric shapes; dimensioning; pipe drafting; foundations and structures; survey plots; graphs and charts; topography; and highway geometry.

003 Intro to Civil & Envir Engr Introduces Civil and Environmental Engineering through hands-on-design, group projects, inquiry-based learning, systems thinking, critical thinking, and computational exercises.

010 Geomatics An introduction to surveying including distance and angle measurements, leveling, traverse surveys, error propagation, topographical mapping, global positioning systems (GPS), and geographic information systems (GIS). *Pre/Co-requisites:* CEE Sophomore standing, or permission of instructor.

011 MATLAB for Solving Engr Prblms Engineering problem solving, computer programming, standard numeric computation, visualization tools, and systems thinking using MATLAB. *Prerequisites:* Concurrent enrollment in Math 20 or 22.

012 Geomatics Lab Laboratory exercises in surveying applications: distance, angle, elevation, traverse, topography, global positioning systems (GPS), and geographic information systems (GIS). *Pre/Co-requisites:* CE 10.

015 Pollution & Solutions Introduction to environmental issues and potential solutions. Emphasis on problem solving: description, decomposition, research, analysis, and performance evaluation.

095 Special Topics

100 Mechanics of Materials (Same as Mechanical Engineering 14.) Stress, strain, temperature relationships, torsion, bending stresses, and deflections. Columns, joints, thin-walled cylinders. Combined stresses and Mohr's circle. *Prerequisites:* CE 1, MATH 121

101 Materials Testing Experimental stress analysis methods; fundamental properties of metals, plastics, and wood; effects of size, shape, method, speed of loading, and strain history on these properties. *Pre-Co-requisites:* Concurrent with CE 100.

125 Eng Econ & Decision Analyses Comparing engineering alternatives; economic evaluations including costs, returns, taxes, and depreciation; project optimization with linear/non-linear models; scheduling; risk and reliability analyses by simulation. *Prerequisites:* Math 21.

132 Environmt & Transport Systems Introduction to systems thinking and the systems approach; ecological and transportation systems components, interactions, and relationships; feedback and emergent properties; systems modeling, management and economic evaluations. *Pre/Co-requisites:* MATH 22, STAT 143 or concurrent.

133 Decision Anlys in Envr & Trans Environmental and Transportation System modeling; decision analysis and optimization; multi-objective problems; application to transportation planning, environmental impacts, groundwater remediation and highway location. *Prerequisite:* CE 130; Co-requisite: CE 10.

134 Modeling Environ & Trans Sys Applied numerical methods with applications to groundwater and traffic flow modeling, stochastic modeling with applications to

watershed and infrastructure management; transportation and environmental systems simulation. *Pre/Co-requisites:* CE 131, CS 16; co-requisite CE 10

140 Transportation Analysis of transportation systems; technological characteristics; the transportation planning process and techniques of travel modeling and forecasting for both urban and rural areas. *Prerequisite:* 10, junior standing in CE, or instructor's permission.

142 Structural Roadway Design Properties of construction materials; design of mixes; analyses of pavement performance; structural design of pavements; highway earthwork, drainage, and construction techniques. *Prerequisites:* 141, 180.

150 Environmental Engineering Basic phenomena and theoretical principles underlying water supply, air and water pollution control, and industrial hygiene. *Prerequisites:* Chemistry 31 or 25, Math. 22.

151 Water & Wastewater Engineering Design of treatment systems for water supply, groundwater remediation, domestic and hazardous wastewater, sewer design; semester-long design projects; ethics; environmental health impacts; governmental regulations. *Prerequisites:* CE 150, 160.

154 Environmental Anyl Practice Analytical procedures used in measuring environmental parameters (includes BOD, COD, Alkalinity, Coliform). Fundamental methods applied to actual waste samples and subsequent data analysis. *Prerequisites:* 150; Chemistry 31.

160 Hydraulics Mechanics of incompressible fluids; flow meters; flow in closed conduits and open channels; elements of hydraulic machinery; laboratory studies of flow and hydraulic machinery. *Prerequisite:* ME 12.

161 Water Resource Engineer Design Formulation of water resource projects; development of design methods for: surface water, risk, storage, and control structures, open channels, and drainage systems; design project. *Prerequisite:* 160.

170 Structural Analysis I Analysis of statically determinate beams, frames, and trusses; expected loads, reactions; influence lines; moving loads; geometric methods for displacement calculations; introduction to matrix analysis for trusses. *Prerequisites:* 100, Computer Science 16.

171 Structural Analysis II Statically indeterminate structural analysis by consistent deformation and stiffness methods; determinations of deflections by energy methods; matrix analysis for frame structures and computer-aided analysis. *Prerequisites:* 170.

172 Structural Steel Design Theory and design of steel structures including flexural members, axially loaded members and combined stress members; design of composite members; and plastic analysis and design. *Pre/co-requisite:* CE 170.

173 Reinforced Concrete Analysis of stresses in plain and reinforced concrete members; design of reinforced concrete structures; and theory of prestressed concrete. *Prerequisite:* CE 170.

175 Senior Design Project Comprehensive design projects will integrate the multiple areas of specialization in civil engineering. Student teams will prepare and present designs to professional review panels. *Prerequisite:* Senior standing in CE.

176 Senior Design Seminar Guest lecturers from private practice discussing professional issues; integration of multidiscipline teams from student design projects; and oral and written presentations. *Co-requisite:* One design elective; senior standing.

180 Geotechnical Principles Characteristics and classification of soils; physical, mechanical and hydraulic properties of soils; seepage; the effective stress principle; stress distribution, consolidation, settlement; shear strength; laboratory testing. *Prerequisite:* CE 100.

191 Special Projects Investigation of special topic under guidance of faculty member. Library investigations, unique design problems, laboratory and field studies. *Prerequisites:*

Senior standing, departmental permission.

192 Special Projects Investigation of special topic under guidance of faculty member. Library investigations, unique design problems, laboratory and field studies. *Prerequisites:* Senior standing, departmental permission.

193, 194 College Honors

195 Special Topics *Prerequisite:* Senior standing in Civil Engineering.

210 Airphoto Interpretation Aerial photographic in-

most important facts and principles of organic and biochemistry and of interrelationships between these branches of chemistry. NO LABORATORY. *Prerequisite:* 31 or 23 or 25. May not be taken for credit concurrently with, or following receipt of, credit for CHEM 26, 42 or 44.

031 Introductory Chemistry Basic course in principles and concepts of general chemistry. These courses, or CHEM 35, 36 serve as suitable prerequisites for 100-level courses in Chemistry. May not be taken for credit concurrently with, or following receipt of, credit for CHEM 23, 25 or 35.

032 Introductory Chemistry Basic course in principles and concepts of general chemistry. These courses, or CHEM 35, 36 serve as suitable prerequisites for 100-level courses in Chemistry. *Prerequisite:* 31 or 35. May not be taken for credit concurrently with, or following receipt of, credit for CHEM 36.

035 General Chemistry General chemistry for students with a strong background in physical sciences. Recommended for students concentrating in physical sciences. *Prerequisites:* One year of high school chemistry, concurrent enrollment or background in calculus. High school physics recommended. May not be taken for credit concurrently with, or following receipt of, credit for CHEM 23, 25 or 31.

036 General Chemistry General chemistry for students with a strong background in physical sciences. Recommended for students concentrating in physical sciences. *Prerequisites:* One year of high school chemistry, concurrent enrollment or background in calculus. High school physics recommended; 31 or 35. May not be taken concurrently with, or following receipt of, credit for CHEM 32.

039 Introduction to Research Overview of methods, areas, and instrumentation of modern chemical research, including hands-on laboratory experiences and written and 6commendedD0.0101 Tc-0m028. ae p 4y not 2w[37ds,

phoresis; natural and recombinant enzyme isolation; assays of DNA-modifying enzymes; computer-based structure/function exercises. Corequisites: 205 or 206. Crosslisted with BIOC 207 and MMG 207.

214 Polymer Chemistry Polymer size and weight distributions. Kinetic models for step polymerization, addition polymerization, copolymerization. Physical properties, characterization of polymers in the solid state and in solution. *Prerequisites:* 144, 162. Alternate years.

221 Instrumental Analysis Systematic survey of modern methods of chemical analysis. Fundamental principles and applications of spectroscopy, electrochemistry, and separation techniques. *Prerequisites:* 121; credit for or concurrent enrollment in 161 or 162 strongly recommended.

223 Mass Spectrometry This course covers basic aspects of modern mass spectrometry instrumentation and techniques as well as specific applications relevant to the students in the course. *Prerequisites:* 142 or 144 and 221 or instructor's permission.

224 Chemical Separations Theory and practice of chromatographic separations. Emphasis on gas-liquid, liquid-liquid, and liquid-solid chromatography. *Prerequisite:* 221. Alternate years.

225 Electroanalytical Chemistry Principles of modern electrochemical analysis focusing mainly on finite current methods - voltammetry, polarography, chronoamperometry, cyclic voltammetry, etc. Introductory to modern operational amplifier instrumentation. Double layer theory and electron transfer kinetics. *Prerequisite:* 161. Alternate years.

226 Analytical Spectroscopy Principles of optical spectroscopic methods of analysis. Emphasis on theory and practice of atomic spectroscopy and new molecular spectroscopic methods. *Prerequisite:* 221. Alternate years.

227, 228 Spec Topics in Analytical Chem Selected topics of current interest in analytical chemistry. New techniques and methodologies, especially in chemical instrumentation. Credit as arranged.

231 Adv Inorganic Chemistry Advanced group theory; electronic transitions in metal complexes and spectroscopic analysis; inorganic substitution and electron transfer mechanisms; homogeneous and heterogeneous catalytic processes; bioinorganic chemistry. *Prerequisite:* 131.

234 Organometallic Chemistry Systematic survey of synthesis, properties, structures, bonding, and reactions of both main group and transition series organometallic compounds. Variation of structure and metal-carbon bond stability throughout periodic system. *Prerequisite:* 231. Alternate years.

236 Physical Inorganic Chemistry Fundamental physical basis for spectroscopic techniques and other observable phenomena important to field of inorganic chemistry. Topics include ligand field theory, magnetism, magnetic resonance, Mossbauer spectroscopy, and optical activity. *Prerequisites:* 161, 231. Alternate years.

237, 238 SpecTopic: Inorganic Chemistry Areas of current interest involving inorganic systems such as bioinorganic, solid state and polymers with unusual properties. Credit as arranged.

241 Advanced Organic Chemistry Stereochemistry, reactivity criteria, reaction mechanisms, and synthetic methods stressed. Reactive intermediates such as carbanions, carbocations, carbenes, and free radicals used to systematize mechanistic discussions. *Prerequisites:* 142, 162.

242 Advanced Organic Chemistry Detailed mechanistic descriptions of processes which may include enolate reactions and stereochemical considerations, addition processes such as halogenation, cycloadditions, hydroboration, hydride and metal-ammonia reductions, annulations such as biomimetic cyclizations, oxidation processes, rearrangements, eliminations, and examinations of approaches to multistep syntheses. *Prerequisite:* 241.

251 Physical Organic Chemistry Structure-reactivity relationships, molecular properties and their interpretation. Methods and results of investigations of mechanisms of common organic reactions. *Prerequisites:* 142, 162. Alternate years.

257, 258 Special Topics in Organic Chem Advanced level discussion of specific topics in organic chemistry of current interest such as photochemistry, carbenes, bioorganic chemistry, magnetic resonance, etc. Credit as arranged.

262 Chemical Thermodynamics Systematic study of application of thermodynamics to chemical problems. Concepts of statistical thermodynamics introduced. *Prerequisites:* 161, 162. Alternate years.

263 Intro to Quantum Mechanics General considerations of quantum mechanics. Development of techniques pertinent to application of quantum mechanics to chemical problems. *Prerequisites:* 161, 162. Alternate years.

264 Fundamentals of Spectroscopy In-depth discussion of the theory of molecular states and transitions between them, with applications to electronic spectroscopy. Explicit treatment of vibrations in molecules. *Prerequisites:* 161, Math.121. Alternate years.

265 Statistical Mechanics Development of statistical mechanics and its application to problems of chemical interest. *Prerequisites:* 161, 162; 263 recommended. Alternate years.

266 Molecular Orbital Theory Introduction to Huckel molecular orbital method. Energy levels and orbitals, molecular properties and their interpretation. Effects of substituents on electronic structure. Extensions of Huckel method. *Prerequisites:* 142, 161. Alternate years. UG only.

267, 268 Special Topics in Phys Chem Advanced discussion of physical chemistry and chemical physics, group theory, solid state, molecular orbital theory, irreversible thermodynamics, kinetics and mechanisms, solution theory, calculations, spectroscopy. Credit as arranged.

282 Senior Seminar Oral and written presentation of a subject of current chemical interest. *Prerequisite:* Audit of 381.

285, 286 Special Topics

291 Undergrad Research Special study in inorganic, analytical, physical, or organic chemistry with an assigned staff member. Findings submitted in written form. *Prerequisite:* Departmental permission. Credit as arranged with maximum of four hours per semester and 12 hours for the undergraduate program.

295, 296 Advanced Special Topics See Schedule of Courses for specific titles. UG only.

001, 002 Elementary A study of Mandarin Chinese designed to give the beginning student the fundamental grammar and vocabulary for speaking, reading, and writing the modern national language.

051, 052 Intermediate A continuation of 1, 2 designed to enable the student to converse in everyday Chinese, and to read and write simple texts. *Prerequisite:* 2 or equivalent.

095, 096 Special Topics Introductory courses on topics beyond the scope of existing departmental offerings. See Schedule of Courses for specific titles.

101, 102 Advanced Chinese Structured readings with emphasis on sentence structures, vocabulary expansion, and increased fluency in self-expression. *Prerequisite:* 52 or equivalent.

195, 196 Special Topics See Schedule of Courses for specific titles.

197, 198 Readings & Research Individual research project or directed reading in area of special interest to student. *Prerequisite:* Instructor's permission. Variable credit.

201, 202 Adv Conversation & Composition To improve oral and written proficiency through reading newspapers and short stories, discussion, and composition. *Prerequisites:* 102 or equivalent for 201; 201 for 202.

295, 296 Advanced Special Topics Advanced courses

or seminars on topics beyond the scope of existing departmental offerings. See Schedule of Courses for specific titles.
Prerequisites: CHIN 202 or equivalent.

013 Ideas in the Western Tradition Great books of Western civilization in their Historical setting. Greece and Rome. *Prerequisites:* Concurrent enrollment in English 27.28; Religion 27, 28; Integrated Humanities Program. Cross-listings: HST 013.

015 From Letters to Literature Topics in script, literacy, books, libraries, cultural expression, preservation and access from ancient Mesopotamia to the age of printing and the era of electronic information.

021 Classical Greek Civilization (Same as History 21.) A study of the "Golden Age of Pericles," the course covers the whole of Athenian society from art to war, culminating in the trial of Socrates.

022 Etymology

- 026 Computer Programming II** Introduction to more advanced programming concepts that provide a foundation for further study in computer science. Topics include data structures and algorithms, concepts of style, design, documentation, testing and debugging techniques. *Prerequisites:* 21.
- 032 Puzzles, Games & Algorithms** Introductory computer science through exploration and analysis of mathematical puzzles and games, and the algorithms that handle them.
- 042 Dynamic Data on the Web** Data is everywhere; Learn to collect, organize, and classify it. Students will design and create tables, queries and reports on the web using introductory programming.
- 095 Special Topics** *Prerequisite:* Instructor's permission.
- 100 Object-Oriented Programming** Object-oriented software analysis, design, and programming using a modern object-oriented programming environment. Topics include encapsulation, information hiding, inheritance, and polymorphism. *Prerequisite:* 26.
- 101 Computer Organization** Introduction to computer system organization including performance, assembly language, machine-level data representation, arithmetic for computers, processor datapath control, memory, and input/output. *Prerequisite:* 26.
- 103 Programming Languages** Systematic treatment of principles underlying the features and implementation of programming languages. Contrast of traditional procedural languages and at least one nontraditional language. *Prerequisite:* 26.
- 104 Data Structures** Lists, Strings, Arrays, Trees and Graphs. Storage systems and structures. Storage allocation and garbage collection. Searching and sorting techniques. Generalized data management systems. *Prerequisites:* 26, Math. 52 or 54.
- 148 Database Design for the Web** Design and implementation of a relational database model using SQL and PHP. Typical project includes creation of ecommerce shopping site. *Prerequisites:* One semester of programming.
- 192 Independent Service & Teaching** Independently designed project or pedagogical experience that benefits the University or the Community under the direction of a CS faculty member. Requires final presentation. *Pre/Co-requisites:* Departmental permission.
- 195 Special Topics** *Prerequisite:* Instructor's permission.
- 201 Operating Systems** Supervisory and control software for multiprogrammed computer systems. Processes synchronization, interprocess communication, scheduling, memory management, resource allocation, performance evaluation, object-oriented systems, case studies. *Prerequisites:* 103, 104.
- 202 Compiler Construction** Practice in design and implementation of translators for ALGOL-like languages. Regular and context-free grammars, parsing, code generation for stack and register machines. Interpreters. Run-time storage administration for block-structured languages. *Prerequisites:* 103, 243.
- 204 Database Systems** Techniques for processing very large collections of data. Secondary storage. Database design and management. Query languages and optimization. Database recovery. *Prerequisites:* 101, 104; 201 recommended.
- 205 Software Engineering** Treatment of software engineering problems and principles, including documentation, information hiding, and module interface specification, tax and semantics. Requires participation in a team project. Students who receive credit for 205 may not receive credit for 208 or 209.
- 208 Software Requirements & Design** Data Tw for processing veryP

member. *Prerequisite:* Department's permission.

295, 296 Special Topic: Computer Science Subject will vary from year to year. May be repeated for credit.

011 Principles of Macroeconomics Introduction to economic concepts, institutions, and analysis, particularly as related to the economy as a whole.

012 Principles of Microeconomics Study of individual economic units with particular emphasis on market interactions among firms and households. *Prerequisite:* 11.

020 Economic Problems Exploration of a current economic issue. Topics vary and may include international trade, debts and deficits, environment, ethnicity, race and gender, and employment and work.

060 Capitalism & Human Welfare Investigates theories of growth of the capitalist economy and the historical process of the ascendance, domination, and recent relative decline of the U.S. economy.

095, 096 Intro Special Topics See Schedule of Courses for specific titles.

110 American Economic History Survey of the economic history of the U.S. from colonial origins through early 20th century, emphasizing economic and institutional changes and events promoting economic growth and development. 11, 12 or instructor permission. *Prerequisite:* 11, 12 or instructor permission.

113 Evolution of Capitalism Origins and development of capitalism; their social-economic institutions and their transference from Western Europe to North America. *Prerequisite:* 11, 12 or instructor permission.

120 Money and Banking Commercial and central banking with special attention given to the Federal Reserve system, monetary theory, and policy. *Prerequisite:* 11, 12 or instructor permission.

130 Public Policy Revenues and expenditures of federal, state, and local governments and intergovernmental relationships; the effects of expenditures and taxation upon individuals, business institutions, and the national economy. 11, 12 or instructor permission.

133 Economics Environmental Policy Investigation of the relationship of markets and government regulation to environmental quality. Alternative public policies to improve efficiency and equity will be evaluated. *Prerequisite:* 11, 12 or instructor permission.

135 Law and Economics Economic analysis of the law, including property, contracts, torts and criminal law. Covers accident and malpractice compensation, product liability, breach of contract, deterrence of crime. *Prerequisite:* 12.

140 Economic Development Theories of economic growth applied to developing countries of the con-temporary world including the political and social determinants of economic progress. *Prerequisite:* 11, 12 or instructor permission.

11, 12 or instructor permission.

permission.

295, 296 Advanced Special Topics See Schedule of Courses for specific titles. *Prerequisite:* 170 and either 171 or 172 or both.

297, 298 Readings & Research Independent study with permission of supervising professor prior to registration. *Prerequisite:* 170 and either 171 or 172 or both.

187 Student Teaching Practicum Full semester student teaching internship in a setting or combination of settings that includes infants, toddlers, and/or preschoolers with disabilities. Integrated readings, research activity and weekly seminar. *Prerequisites:* ECSP 210, 211.

200 Contemporary Issues

202 Inft, Tdlr, Preschl w/ Disabil

Prerequisites: 10, 24; concurrent with EDEL 177, EDSP 5.

155 Lab Experience in Inquiry Supervised practicum in field sites. Implementation of teaching methods from Inquiry Block. Documentation of classroom work, child study, and development of portfolio. *Prerequisites:* Admission to Elementary Teacher Education Program; concurrent with EDEL 157, 158, 159.

156 Teaching Math for Meaning Methods of teaching mathematics in elementary school. Research base for how children learn mathematics and how math curriculum is organized. Special focus on teaching diverse groupings of learners. *Prerequisites:* Admission to Elementary Teacher Education Program; concurrent with EDEL 175, 176, 178.

157 Social Educ and Social Studies Methods of social education for elementary-aged school children. Promoting children's efficacy by nurturing personal interests. Development of folio of developmentally-sound examples of social studies learning. *Pre/Co-requisites:* Admission to Elementary Education Program; EDEL 155, 158.

158 Teaching Science for Meaning Teaching K-6 science through inquiry. Use of constructivist pedagogy to develop lessons and activities that develop concepts from physical, earth and life sciences. *Pre/Co-requisites:* Admission to the Elementary Education Program; concurrent with EDEL 155 & 157.

159 Integrating the Arts Incorporate visual and performing arts (music, movement, theatre) as a way of learning and teaching by focusing on artistic expression. Emphasis on multi-cultural arts. *Pre/Co-requisites:* EDEL 10 fall semester or permission of the instructor.

175 Lab Experience in Literacy Supervised practicum in a field site. Implementation of teaching methods from Literacy Block. Documentation of classroom work, child study, and development of portfolio. *Prerequisites:* Admission to Elementary Teacher Education Program; concurrent with EDEL 156, 176, 178.

176 Language Arts&Literacy Skills Cognitive research base for the social context of children's learning. Methods of language arts as literate activity. Emphasis on emergence of literacy in the child of special need. *Prerequisites:* Admission to Elementary Teacher Education Program; concurrent with EDEL 156, 175, 178.

177 Children's Lit & Literacy Learning about the breadth of literature available for use in elementary school. Developing the ability to evaluate and use literature in reading and writing activities. Emphasis on bias-free methods. *Pre/Co-requisites:* Admission to Elementary Teacher Education Program; concurrent with EDEL 156, 175 and 176.

178 Mtg Indiv Needs:Assmt&Instruct Methods of responding to individual differences within a heterogeneous classroom. Sources of student variability, developing settings of least restriction, and appropriate assessment strategies. *Pre/Co-requisites:* Admission to Elementary Teacher Education Program; concurrent with EDEL 56, EDSP 5.

181 Student Teaching

185 Student Teaching Internship Supervised student teaching internship in field site. Fifteen-week total immersion as a beginning teacher. Responsibilities specified in internship handbook. Documentation of activities for professional portfolio. Concurrent with EDEL 187 and 188. *Prerequisite:* Method Blocks in Inquiry and Literacy. Variable credit

186 Seminar in Student Teaching

187 Plan,Adapt,Deliv Rdg Instruct Methods of diagnostic teaching in reading and writing. Identifying components of effective programs and use of research findings to deliver instruction in meaningful contexts. Documentation of personal model of literacy for professional portfolio. *Prerequisite:* Method Block in Literacy.

188 Principles of Classroom Mgmt Application of basic learning principles to classroom management. Creation of behavior management plans with emphasis on social

and academic behavior of diverse groupings of children. Concurrent with 185 and 187. *Prerequisite:* Method Blocks in Inquiry and Literacy.

189 Portfolio Dev&Reflective Pract This course develops candidates' critical reflectivity on their knowledge and expertise of classroom teaching through the construction of a professional portfolio. *Prerequisites:* Concurrent with EDEL 185 and 188.

197 Readings & Research

200 Contemporary Issues Designed so that its content and structure may accommodate special issues not especially appropriate within the boundaries of an existing course. *Prerequisites:* Twelve hours in education and related areas.

241 Science for Elem Schools Examination of elementary school science programs. Emphasis on methods and materials relating to construction, use of science units for children in grades K-6. *Prerequisites:* Twelve hours in education and related areas, or permission.

244 Social Studies in Elem Schls Study of literature, research, and problems in teaching social studies in the elementary school. *Prerequisite:* Twelve hours in education and related areas.

256 Methods & Materials in Math Evolution of mathematical concepts, notations. Meaning of numbers, number-systems. Theory 24. [(1)E]E8pts, notations. Meaning of number

225 Teaching Pract: Human Sciences Teaching in middle or secondary schools under guidance of cooperating teachers and college supervisor. Credits variable up to 15 hours per semester. (Not offered for graduate credit).

295 Lab Experience in Education

296 Special Topics

Classification, application of microcomputers to catalog and circulation services. *Prerequisite:* 272 or equivalent.

274 Design Instr Sch Lbr Media Ctr Designing library instruction for integration with curricula and collaborating to create effective lessons. Issues surrounding active learning, critical thinking, learning styles, and assessment are examined. *Prerequisite:* 272 or equivalent.

275 Dev Sch Libr Media Ctr Collect Evaluating and selecting books, periodicals, audiovisuals, software, and other materials for full range of student ages and ability levels. Maintaining collection, weeding, using interlibrary loan, and dealing with censorship. *Prerequisite:* 272 or equivalent.

276 Information Sources & Services Helping students and teachers find information using print, online, CD-ROM and other resources. Developing interview skills and selecting materials for elementary and secondary core collections. *Prerequisite:* 272 or equivalent.

277 Info Tech Schl Libr Media Ctrs Selecting, using, and maintaining full range of media equipment, including audiovisual and computer based systems. Designing and improving presentation facilities for media. *Prerequisites:* 272 or equivalent.

295 Lab Experience in Educ Supervised field work designed to give students experience in specialized areas for their professional development. *Prerequisite:* Permission of the Coordinator of Professional Laboratory Experiences.

200 Contemporary Issues Designed so that its content and structure may accommodate special issues not especially appropriate within the boundaries of an existing course. *Prerequisites:* Twelve hours in education and related areas.

264 Evaluation in Ed & Soc Svcs For educational and social service personnel. Overview of the state-of-the-art of evaluation, emerging concepts, related models. Potential applications to settings; systematic data analysis. *Prerequisite:* Twelve hours in education or permission.

266 Educational Finance National, state, and local practices in educational financing and taxation; educational policies and incentives in funding; other revenue sources; financial expenditure procedures. *Prerequisite:* Twelve hours in education or permission.

268 Educational Law Legal basis for education. State and Federal statutes; related court cases THE COLLEGE OF ARTS AND SCIENCES]; Attorney General opinions; Special Education procedures; Vermont State Board and State Education Department policies; regulations. *Prerequisite:* Twelve hours in education or permission.

280 Schl Business Mgmt Analysis of basic management concepts applied to administering schools. Topics include leadership/management trends, types of budgets, risk management, planning, and other personnel and business operations issues. *Prerequisite:* Twelve hours in education.

291 Spec Tpcs in Org & Hum Res Dev Special issues in counseling, administration and planning, social work, or higher education not appropriate to content of existing courses. Courses will reflect the social services orientation of the Department of Education.

295 Lab Experience Supervised field work designed to give students experience in specialized areas for their professional development. *Prerequisite:* Permission of the Coordinator of Professional Laboratory Experiences.

200 Contemporary Issues

222 Cltvate Chil Lit in El/Mid Sch Contemporary research and practice related to the development of strategic, motivated, and independent readers and writers. Emphasis

on integrating reading and writing within collaborative environments. *Prerequisites:* Twelve hours in education and/or related areas including an introductory course in reading or permission.

223 Read Pgms in Sec Schl & Col Relationship of reading to learning study or organization, instructional procedures, and materials for developing reading improvement programs for secondary and college students; reading in content areas. *Prerequisite:* Twelve hours in education and/or related areas or permission.

228 Lit in Jr /Sr High Schl Curr (Literacy Criticism for Teachers.)

234 Lit & Lang for Chil & Youth Characteristics, interests, reading habits of children and youth; selection, evaluation of literature. Organizing book units for teaching literature, for content areas. Emphasis on development of oral, written expression. *Prerequisite:* Twelve hours in education and related areas or permission.

236 Multicultural Children's Lit Current research in multicultural education and literacy informs examination of representation and perspective in literature for children and youth. Perspectives include religion, race, gender, SES.

295 Laboratory Experience in Educ

010 Introduction to Teaching Orientation to teaching at middle level. Examination of young adolescent students, teachers' roles, reflective practice, guided inquiry, middle schooling and middle school concept. *Prerequisites:* Admission to Pre-professional teaching education.

024 Learners, Development & Learning Students learn about the interrelated processes of development and learning throughout childhood but with special emphasis on the approximate ages of ten to fourteen. *Prerequisites:* EDML 10.

055 Special Topics I

056 Teachers & Teaching Process Students examine professional responsibilities of middle level teachers as defined by Vermont and national standards via classroom observations. *Prerequisites:* EDML 10, 24.

171 Teaching Practicum II Second teaching practicum on a middle level team to learn policy, curriculum, exemplary pedagogy, assessment in second of two academic concentrations defined by student's IDIMC plan. *Prerequisites:* Admission to Middle Level Professional Program.

177 Adolescent Lit and Literacy Course participants examine middle school literature, focusing on research-based instructional practices for teaching and engaging middle schoolers in reading and writing across the subject areas.

197 Readings & Research

200 Contemporary Issues

207 Adoles Lrng & Beh & Cog Perspect In depth examination of cognitive learning theory and its background in behavioral and other learning theories, with application to teaching in a middle or secondary setting. *Pre/Co-requisites:* Acceptance to licensing program. (Crosslisted with EDSC 207).

260 Teaching Young Adolescents Focus on understanding and reflecting on an integrative developmental approach to the design of middle level curriculum, with an emphasis on literacy and numeracy.

261 Middle Level Teaching Pract Teaching practicum on middle level team in two areas of academic concentration, acquiring knowledge of and skills in curriculum, pedagogy, and assessment. *Pre/Co-requisites:* Admission to Middle Level Professional Program.

270 Middle School Org & Pedagogy Focuses on exploring theory and practice in responsive school organization for young adolescents, including interdisciplinary/partner teaming, block scheduling, and teacher advisories, as well as teaching lessons in one area of specialization. *Pre/Co-*

requisites: EDML 260, 261.

285 Middle Level Student Teaching Full-time supervised student teaching internship as a member of a middle school team. Development of a professional portfolio as stipulated in the Middle Level Program Handbook. *Pre/Co-requisites:* EDML 260, 261, 270 and permission.

286 Internship Support Seminar Seminar addresses and responds to internship experiences including planning, reflective practice, classroom management, teamwork, and assessment of learning. Guidance in development of Professional Teaching Portfolio. *Pre/Co-requisites:* EDML 260, 261, 270.

287 Literacy & Mathematics All middle level teachers are expected to teach reading, writing, literature and mathematics. This course is the capstone for work previously done in these pedagogies. *Pre/Co-requisites:* Successful completion of EDML 260, 261, 270.

295 Laboratory Experience

181 Music for Elementary Teachers Development of musical skills, understandings, and attitudes pertinent to the teaching of music in elementary classroom. *Prerequisite:* Elementary majors, acceptance into teacher education program.

281 Elementary Music Ed Methods Methods and materials for teaching music in elementary schools. Five hours classroom observation per week required. *Prerequisite:* Junior standing in Music Ed. UG only.

282 Secondary Music Ed Methods Methods and materials in the teaching of vocal and instrumental music in secondary schools. Five hours classroom observation per week required. *Prerequisite:* Junior standing in Music Education. UG only.

021 Foundations of Phys Educ Examination of the development of physical education as an academic discipline and profession, its foundations, current trends, issues and career opportunities. *Prerequisites:* Physical Education majors;

Litera3hematics Am/TTRitiCros16.m/Tg/F2yTRisp1 0 TD0.0087 Tc09j-12requisite4(9)10.4(5aching To meetTD

200 Contemporary Issues Designed so that its content and structure may accommodate special issues not especially appropriate within the boundaries of an existing course.

Prerequisites: Twelve hours in education and related areas.

201 Admin of Athletic Programs Background for effective administration of the athletic program of schools. Include scheduling, budgeting, management, equipment, policy, public relations, and education justification. *Prerequisite:* Twelve hours of education and psychology.

203 Principles of Physical Ed Principles basic to sound

appropriate within the boundaries of an existing course.
Prerequisites: Twelve hours in education and related areas.

201 Foundations of Special Ed Examination of historical, current trends in the treatment of individuals with disabilities, including the effects of litigation, legislation, and economic considerations on educational and residential service delivery systems. *Prerequisite:* Twelve hours in education and related areas, or permission.

202 Stdnt w/Signif Dis:Char&Ed Int Normal development - birth through six years, developmental disorders, disabilities, medical/health considerations. Management of significant disabilities through the employment of such procedures as handling, positioning, and feeding. *Prerequisites:* Permission

207 Cooperative Learning Theoretical and experiential instruction in procedures to increase social acceptance and academic achievement of exceptional learners in mainstream settings through cooperative learning. *Prerequisites:* Permission. Three hours.

216 Curr&Instr Needs/All Students Introduction to curriculum and instruction for all students with a focus on individuals who present academic and behavioral challenges. Emphasis on assessment, evaluation, curriculum, instruction, theories of learning and social development. *Prerequisite:* Permission.

217 Instr Indiv/Significant Disab Individualized instruction for learners with significant disabilities emphasizing objectives, assessment, task analysis, and behavior analysis. *Prerequisite:* Permission.

221 Family Centered Services An in-depth study of families of children with special needs; family ecology; interaction and life cycle. Development and implementation of family/professional collaboration strategies. Practicum required. *Prerequisites:* Permission.

224 Meeting Inst Needs/All Stdnts Students apply principles of learning and social development to improve academic and social skills of all individuals with a focus on those who present academic and behavioral challenges. *Prerequisite:* Permission.

228 Instr for Severely Handicapped Students apply advanced principles of behavior analysis in the development and implementation of instructional programs for learners with moderate and severe disabilities. *Prerequisite:* Permission and introductory behavior analysis course.

274 Culture of Disability Focus on theoretical questions of how societies understand disability and its consequences for social justice, by examining the multiple determinants of the societal construction of disability. *Prerequisites:* Junior, senior or graduate standing. Corss-listings: CMSI 274.

275 Voc Instr Students W/Spec Need Development of instructional strategies for including students with disabilities in vocational education. Procedures for developing, implementing, and evaluating individualized vocational plans. *Prerequisite:* Admission to an approved teacher certification program or permission.

280 Assessment in Special Ed Course covers assessment knowledge and skills essential for special educators, including test selection, administration and scoring, and legal issues related to special education assessment. *Prerequisites:* Admission to Graduate Program in Special Education or permission of instructor.

290 Meeting Curr Needs of Students Study of curriculum and technology areas related to the development, adaptation, and assessment of all students focusing on students with academic and behavioral challenges. *Prerequisite:* Permission.

295 Laboratory Exp in Education Supervised field work designed to give students experience in specialized areas for their professional development. *Prerequisite:* Permission of the Coordinator of Professional Laboratory Experiences.

296 Laboratory Exp in Education Credit as arranged.

297 Curr for Indvcls W/Handicaps Students develop and implement an objectives-based curriculum for learners with learning disabilities, mental retardation, behavior disorders, and/or multidisabilities. *Prerequisite:* Permission.

298 Special Educ Practicum Students provide direct instruction for six learners with learning disabilities, mental retardation, behavior disorders, and/or multidisabilities. *Pre-2T2 1/c4r pr*

to human computer interaction in the area of sensory intelli-

ing, multiple access and equalization techniques. *Pre/Co-requisites*: Pre: EE 174 and (EE 270 or STAT 143 or STAT 151 or STAT 153)

281 Materials Science Seminar Presentation and discussion of advanced electrical engineering problems and current developments. *Prerequisite*: Senior or graduate engineering enrollment.

282, 283, 284 Seminar

289 Digital Signal Processing Lab Design and micro-processor implementation of real-time digital signal processing systems. PC-based evaluation module and development tools. Experiments include sampling, digital filtering, and the FFT. *Pre/Co-requisites*: 171.

295 Special Topics Special topics in developing areas of electrical engineering. *Prerequisite*: Senior standing or permission.

175 The Management of Technology (Same as Business Administration 175.) Role of technology in industry, the nature of technological change, strategies, management, research and development, forecasting, product service/project selection, development, management, transition to market, and evaluation. *Prerequisite*: Senior standing in engineering or business administration.

176 Plant Planning and Design Analysis of facilities and services requirements, material handling, office and clean room layout, mathematical and computer techniques, safety and plant conservation. *Prerequisites*: Junior standing in engineering or business administration, or instructor's permission.

185 Senior Project Individual management engineering study designed to the particular interest of the student, utilizing and synthesizing the student's engineering management education experience. *Prerequisite*: Senior standing in EMBA.

195 Special Topics Specialized or experimental course offered as resources permit.

001 Introduction To Engineering An introduction to engineering and what engineers do. Design projects, guest lecturers and visits to engineering enterprises. S/U grading.

002 Graphical Communication Principles of computer-aided drafting/design; production of engineering drawings including: orthographic, auxiliary, section, pictorials and dimensioning, graphics and charts; applications in specific engineering disciplines.

010 Diversity Issues Math/Sci/Eng Diversity in CEMS: under-representation, environmental justice, gender/race participation, ethical considerations, urban planning, equal opportunity, Title IX. Landscape of race/gender in STEM.

095, 195, 295 Special Topics

001 Written Expression A course in writing with some selected readings as examples of style and writing strategies.

004 Engl for International Stdnts Review of English grammar, practice in expository writing, vocabulary building, and improvement of speaking and listening skills. *Prerequisite*: Instructor's permission.

005, 006 First Year Seminar Students to write in a variety of forms, styles, and genres in response to selected texts of literary or cultural significance. Themes, texts, and writing assignments to vary by section. *Prerequisites*: First-year standing in College of Arts and Sciences.

011 Types of Literature Introduction to fiction, poetry, and drama - past and present, British and American.

012 Introduction to Drama Study of the play as a work

of literature and as a dramatic experience. Continental, British, and American drama from all ages.

013 Introduction to Fiction Exploration of a variety of fictional forms, including the short story, the novella, and the novel.

014 Introduction to Poetry Examination of the forms of poetry, past and present, British and American. Provides a wide variety of perspectives on the poem.

021 British Literature Survey of major figures in British literature such as Chaucer, Milton, Swift, Wordsworth, and Woolf.

022 British Literature Survey of major figures in British literature such as Chaucer, Milton, Swift, Wordsworth, and Woolf.

023, 024 American Literature Survey of major American writers from the beginning of the 19th century to the present, such as Hawthorne, Melville, Dickinson, Twain, Hemingway, and Faulkner.

025, 026 World Literature Survey in comparative literature dealing with the great writers of the world, to include Virgil, Dante, Goethe, and similar major figures. Students may not take for credit both English 25 and 27; or both English 26 and 28.

027 Lit of Western Trad: Int Humn Study of primary authors in the Western cultural tradition from Homer to the modern period with particular reference to history, religion, and philosophy. Students may not take for credit both English 25 and 27; or both English 26 and 28. *Prerequisites*: Concurrent enrollment in Religion 27, 28. *Prerequisites*: Concurrent enrollment in Religion 27,

028 Lit of Western Trad: Int Humn Study of primary authors in the Western cultural tradition from Homer to the modern period with particular reference to history, religion, and philosophy. Students may not take for credit both English 25 and 27; or both English 26 and 28. *Prerequisites*: Concurrent enrollment in Religion 27, 28; History 13, 14; Integrated Humanities Program.

040 Science Fiction & Fantasy Lit Representative modern works of fantasy and science fiction, including works by Asimov, Tolkien, and Clarke. I, II.

041 Crime Story A study of the use of "crime situations" as the central plot device in various types of narrative: novels, short stories, films, and television series.

042 Women in Literature Survey of women's literary tradition in English. Focuses on the ways women have written, read, written about, and been represented in 19th and 20th century literature.

050 Expository Writing Writing and analysis of expository (nonfiction) essays. *Prerequisite*: Sophomore standing.

053 Intro to Creative Writing Introductory course on techniques of writing poetry, short prose fiction, and creative nonfiction. Classes organized around discussion of student work; weekly writing assignments. *Prerequisite*: Sophomore standing.

057 Race & Ethnicity Lit Stds: Intro Introductory courses addressing the representation and construction of "race" in literature and/or the contributions of ethnically diverse writers to the American culture. Focus and readings vary by instructor. May be repeated for credit.

061 Intro to African Literature Readings in African literature, concentrating on major human and political themes and literary techniques.

065 Survey of Folklore Basic concepts of folklore; development of the discipline; defining the major genres; role of folklore in modern society.

085 Text & Context: 1st Yr Prosp Mjrs Introduction to the critical work of close reading and close writing. Readings vary by section. Recommended for first-year students planning to major in English.

086 Critical Approaches to Lit Several theoretical approaches to literary study applied to specific texts. No prerequisite, but recommended only for students with sophomore standing or first-year students with Advanced Place-

ment. Required of all English majors.

095, 096 Introductory Special Topics See Schedule of Courses for specific titles.

101 Structure of English Language Descriptive study of modern American English. *Pre/Co-requisites:* 3 hrs in English numbered 5-96; soph standing. Cross-listings: CMSI 164.

102 Hist of English Language Principles of historic linguistics and their application to English. *Pre/Co-requisites:* 3 hours in English courses numbered 5-96 and sophomore standing.

103 American English Dialects Class will examine dialects of American English and the methodology of dialectology with focus on Vermont speech and the social meaning of dialect variation. *Pre/Co-requisites:* 3 hrs English numbered 5-96; soph standing. Cross-listings: CMSI 162.

104 Tutoring Writing This course, for students who will be tutoring at the Writing Center, explores ways of responding to writers one-on-one.

PDF GENERATED BY THE UNIVERSITY OF VERMONT LIBRARY SERVICES CENTER

19th century. *Pre/Co-requisites*: 3 hours in English courses numbered 5-96 and sophomore standing.

150 Topics: Early American Studies Topics in literature and cultures of Americas from European conquest to 1800. Topics: Imagining America; Dissent in America. May repeat for credit with different content. *Pre/Co-requisites*: 3 hours in English courses numbered 5-96 and sophomore standing.

151 19th Century American Poetry American verse of various genres and modes by such authors as Whitman, Poe, Dickinson, Longfellow, and Sigourney. *Pre/Co-requisites*: 3 hours in English courses numbered 5-96 and sophomore standing.

152 19th Century American Fiction Short stories, novellas, and novels by such writers as Cooper, Sedgwick, Poe, Hawthorne, Wilson, Melville, Stowe, James, Harper, Chesnutt, Chopin, and Jewett. *Pre/Co-requisites*: 3 hours in English courses numbered 5-96 and sophomore standing.

153 19th Century American Prose American non-fictional genres including essays, histories, slave narratives, speeches, and sermons. *Pre/Co-requisites*: 3 hours in English courses numbered 5-96 and sophomore standing.

156 Topics:19C American Studies Interdisciplinary topics examining issues in 19th-century American culture. Representative topics include: Dissent in America, American Literary Cultures. May repeat for credit with different content. *Pre/Co-requisites*: 3 hours in English courses numbered 5-96 and sophomore standing.

158 Topics:19C Women's Writing Various genres by 19th-century women. Topics: The Petticoat Empire; Women's Regionalist Fiction; 19th-century British and American Women's Writing. May repeat for credit with different content. *Pre/Co-requisites*: 3 hours in English courses numbered 5-96 and sophomore standing. Cross-listings: WGST 122.

159 Afr Am Lit to Harlem Ren A survey of African American writings from the Colonial period to WW1. *Pre/Co-requisites*: 3 hours in English courses numbered 5-96 and sophomore standing.

160 Afr Am Lit & Cul Before 1900 Topics in literature and culture of African Americans before 1900. Topics: Slavery and American Literature; Slavery's Shadows. May repeat for credit with different content. *Pre/Co-requisites*: 3 hours in English courses numbered 5-96 and sophomore standing.

161 20th-Century British Novel British novelists since 1900, including Forster, Conrad, Lawrence, Woolf, and other more recent writers. *Pre/Co-requisites*: 3 hours in English courses numbered 5-96 and sophomore standing.

162 20th-Century Irish Literature Irish literature from 1890 to the present, emphasizing Joyce and Yeats. *Pre/Co-requisites*: 3 hours in English courses numbered 5-96 and sophomore standing.

163 Topics:20C American Studies Interdisciplinary topics examining issues in 20th-century American culture. Representative topics include: Poe's Children; The Literary Vampire; Jazz. May repeat for credit with different content. *Pre/Co-requisites*: 3 hours in English courses numbered 5-96 and sophomore standing.

164 Modern Poetry Poetry from beginning of modern period to end of WWII, emphasizing Yeats, Eliot, Stevens, Auden, E448 Tw[(Auden, E44804,ics: Sla-)Tj0 -1.08 T..rent coeseoe/TT4ePr(Pre/)Tj-22.47.168.2/TT2 1 Tf6.6071 0 TD0.0095 fric Poe0end96 ae standing.

Environmental Studies; 1, 2; permission.

152 Environment Information Skills This course focuses on the complexities of conducting environmental research in a networked information age by teaching information concepts, skills, and broad ranging resources. *Prerequisites:* ENVS 151, or concurrently enrolled in ENVS 151.

156 Permaculture (Cross-listed with Plant and Soil Science 156.) Design of agriculturally productive environments that have the diversity, stability, and resilience of the natural biosphere to harmoniously integrate landscape and people. *Prerequisites:* Three hours basic biological or ecological science, or permission.

166 Environmental Hst of N America Examination of human-environmental interaction on the North American continent over the past five hundred years. *Pre/Co-requisites:* 3 hours history. Cross-listing: HST 166

173 Landscape Natural History This field-based course examines patterns and processes on local landscapes from an interdisciplinary perspective, with an emphasis on geology, soil science, plant ecology, and ecosystem geography. *Prerequisites:* ENVS 1, sophomore standing.

174 Nat Areas Conservation&Steward Examines land protection and stewardship efforts of conservation organizations and public agencies. Builds on principles of conservation biology to understand issues in conserving and managing natural areas. *Prerequisites:* ENVS 1 or NR 1 or permission.

177 Intro to Landscape Restoration Introduction to the history, philosophical foundations, and approaches to restoration of natural landscapes damaged by human activity and neglect. Case studies of selected local sites. *Prerequisites:* 1, Natural Resources 1, or permission.

178 Environmental Ethics Current approaches and problems in environmental ethics drawing on philosophy and case studies in animal rights, land ethics, deep ecology, wilderness protection, and human rights. *Prerequisites:* One environmental course, junior standing.

179 Ecofeminism (Cross-listed with Women's Studies 179.) Investigation of the parallel dominations of women and nature, through analysis and reflection on ecofeminist theory, activism, and spirituality. *Prerequisites:* 1, 2 or Women's Studies 73, sophomore standing.

180 Radical Environmentalism Survey of radical environmental philosophy and activism from a liberation ethics perspective. Includes deep ecology, ecofeminism, environmental justice, and ecological resistance movements around the world. *Prerequisites:* 1, 2, sophomore standing.

182 Religion and Ecology Exploration of the greening of major world religious traditions in both practice and philosophy. Includes institutional, activist, and lifestyle initiatives in ecological spirituality. *Prerequisites:* ENVS 1 or 2; or Eceffeccironmem from 1.53.01sophy

tion, stress); concepts of transfer, retention; alternatives in teaching, coaching methodologies based upon applied principles in motor learning. *Prerequisites:* 166, ECHD 62 or 63, or equivalent. Crosslisted with EDPE 240.

241 Sem in Phys Educ & Athletics Examination and analysis of contemporary issues and trends in physical education and athletics not especially appropriate within the boundaries of an existing course. Crosslisted with EDPE 241.

242 Exercise and Sport Psychology Study interaction between psychological variable, human motor performance. Concepts, methods relating to achieving peak athletic performance; understanding psychology of injury; fostering adoption, adherence to exercise. *Pre/Co-requisites:* PSYC 001 and junior status.

260 Adapted Physical Activity Recognition, prevention, correction of functional, structural deviations from normal body mechanics. Organization of programs adapted to needs of handicapped individuals in both special class and mainstreamed settings. *Prerequisite:* 155, 104, 105 or equivalent teaching experience. Crosslisted with EDPE 260.

261 Physiol Chgs&Perform w/ Aging The purpose of this course is to study the age-related changes in physiological systems and evaluate how they affect physical and exercise performance. *Pre/co-requisites:* ANPS 19,20; EXMS 269.

262 Human Perf & Ergogenic Aids The purpose of this course is to evaluate the role and effectiveness of performance enhancing substances in sports: including supplements, diets, banned substances, prescription and social drugs, and others. *Pre/Co-requisites:* ANPS 19,20; EXMS 269; NFS 163.

263 Fitness Pgms in Spec Populatns Principles of exercise testing and prescription in select special populations. Theory and application of physical fitness programming, emphasizing individuals with chronic and non-cardiac conditions. *Pre/Co-requisites:* EXMS 167, 260.

264 Neuro Mech & Motor Control Sensorimotor, musculomechanical systems for coordinated, purposeful movements, emphasizing neurophysiological mechanisms to maximize performance and rehabilitation. Injury, training, practice, learning and other cognitive processes are examined. *Pre/Co-requisites:* ANPS 19,20; EXMS 240.

265 Exercise & Sport Science Discussion and integration of topics related to exercise physiology, kinesiology, motor learning, and sociocultural aspects of sport. Crosslisted with EDPE 265.

266 Ex Prescrip for Sprt, Hlth & Fit Course covers basic concepts of exercise prescription and exercise program design. Particular attention is paid to individualization of exercise program to meet participant needs. Crosslisted with EDPE 266.

267 Sci Strength Training & Condng Course focuses on physiology of muscle adaptation following resistance or aerobic training. Particular attention is paid to specificity of metabolic adaptation for individual sports. *Prerequisite:* Twelve hours in exercise and movement science and related area. Cross-listed with EDPE 267.

269 Exercise Physiology Investigates physiological responses during exercise. Laboratory, classroom experiences enable understanding of bodily responses during exercise. Content includes energy metabolism, muscular, cardiovascular, pulmonary responses, and temperature regulation. Crosslisted with EDPE 167.

271 Practicum I The purpose of this practicum is to provide the student with a hands-on experience in a workplace environment by providing opportunity for the student to put classroom learning into practice. *Pre/Co-requisites:* ANPS 19,20; EXMS 269.

272 Practicum II - Option B The purpose of this practicum is to provide the student with a hands-on experience in a workplace environment by providing opportunity for the student to put classroom learning into practice. *Pre/Co-*

requisites: EXMS 271.

001 Forest Conservation Introduction to the ecology and management of American forests: forest distribution, ownership, and ecological factors, species interactions, multi-resource management goals, and silvicultural practices. Cannot be taken by junior- or senior-level RSEN students.

021 Dendrology Classification, silvical characteristics, and identification features of native and introduced trees and shrubs.

073 Small Woodland Management Concepts of forest ecology, resource inventory, cultural practices, and multiple use management for small woodland areas.

081 Forestry Seminar Readings and discussions introducing current issues in forestry. *Prerequisite:* First or second year standing in Natural Resources.

120 Forest Ecology Forest environment and its effects on the development and distribution of forest communities. Introduction to population dynamics, systems and analysis, diversity, stability, ecosystem disturbances, and succession. *Prerequisite:* Natural Resources 1, or another introductory biological science course. Not offered 2001-02.

121 Forest Ecology Laboratory Application of ecological principles in the analysis of forest communities. *Prerequisite:* Natural Resources 25, a course in tree identification, and previous or concurrent enrollment in Natural Resources 103.

122 Forest Ecosystem Analysis An integrated field course to investigate, through quantification and interpretation, the flora, fauna, and abiotic components (soils, physiology, water, and microclimate) of a selected forest ecosystem. *Prerequisites:* FOR 121, NR 140.

126 Forest Ecology Field Trip Assessment of southeastern forest ecosystems including Smoky Mountain communities, and upland and bottomland forests of the Georgia Piedmont and South Carolina Coastal Plain. Field trip at end of spring semester. *Prerequisites:* A course in plant identification, a course in ecology, instructor's permission.

132 Forest Fire Behavior & Mgmt Forest fire ecology, behavior, effects, weather relationships, danger rating, prevention, detection, management, prescribed fire, smoke management, wildland/urban interface, and multi-resource perspectives. *Prerequisite:* A course in plant ecology or concurrent enrollment. Knowledge of plant identification. Alternate years.

133 Forest Entomology (Cross-listed with Plant and Soil Science 107.)

146 Remote Sensing of Natural Res (Cross-listed with Natural Resources 146, Geography 185.) Identification, interpretation, measurement, and mapping of natural resources from aerial photographs and satellite imagery. Labs include air photo interpretation and digital image analysis. *Prerequisites:* Junior standing. Alternate years.

152 Forest Resources Values History, methods, and current issues associated with the nonmarket and market values of forest-based resources, including aesthetics, wildlife, recreation, water, and timber. *Prerequisites:* Economics 12 or CDAE 61. (Same as Recreation Management 152).

158 Stewardship: Private Woodlands Basic financial, legal and operational aspects for long-term ownership and stewardship of woodlands; appraisals, taxation, land trusts, conservation easements, estate planning; Vermont focus. *Prerequisite:* Course in economics.

162 Properties & Uses of Wood Properties, uses, and identification of commercial woods of the U.S. Manufacture of major wood products. *Prerequisite:* A course in tree identification. Alternate years.

163 Timber Harvesting Private forest emphasis; impacts of alternative techniques on cultural and natural re-

sources; preharvest inventory, prescription, layout, contracts, bookkeeping; postharvest operations. Alternate years.

182 Advanced Forestry Seminar In-depth examination of contemporary issues in forestry. *Prerequisite:* Junior or senior standing in Forestry. Credit arranged.

185 Undergrad Special Topics Readings, investigations, and lectures in selected forest resource subjects. *Prerequisite:* Instructor's permission. Credit arranged.

191 Forestry Work Practicum Supervised work experience in forest resource area. *Prerequisite:* Instructor's permission. Credit arranged.

205 Mineral Nutrition of Plants (Cross-listed with Botany 205.)

222 Advanced Silviculture Scientific basis and contemporary status of silviculture practices. *Prerequisites:* 223, permission. Alternate years, 2000-01.

223 Multi-Resource Silviculture Theory and application of forest stand maintenance/manipulation for forest ecosystem sustainability. Topics: Silvics, regeneration, tree improvement, protection, stand structure/dynamics/tending, and multi-resource perspectives. *Prerequisites:* 223, permission.

Prerequisites: 223, permission. (2000-01) (303) 210.17.65 Pg. 4.0118 Tw (Botany susta04nged.) FO

- 274 Adv Top:Critical Urban&Soc Geo** Advanced offerings in urban and critical social geography. Possible topics include social justice and the city, human rights, geographies of social control. *Prerequisites:* Senior or graduate standing with nine hours in geography, or instructor permission.
- 281 Adv Topic:GIS & Remote Sensing** Advanced offerings in GIS or remote sensing focusing on landscape interpretation for decision-making practices. Incorporation of applications from Vermont public and private sectors. *Prerequisites:* Senior or Graduate standing with 9 hours in Geography; or instructor's permission.
- 295, 296 Advanced Special Topics** See schedule of courses for specific titles.
- 297, 298 Readings & Research**

- 001 Earth System Science** An introduction to the earth as a closed system, the cycling of materials and energy within it, and how it interacts with the hydrosphere and atmosphere.
- 003 Fire & Ice** Introduction to volcanoes/plate tectonics ("fire") and glaciers/climate change ("ice") using lectures, slides, discussion, and field trips. Considers Vermont and world-wide geological examples.
- 005 Mt - Lake:Geol Lake Chmpln Bsn** Scientific principles applied to the geology and geologic history of the Lake Champlain Basin.
- 007 Earth Hazards** Understand geological and societal causes of death and destruction by earthquakes, landslides, floods, volcanoes, storms, and avalanches around the world.
- 008 The Dynamic Earth** Exploration of Earth from a systems perspective, the exchange of mass and energy with the atmosphere, hydrosphere and lithosphere. How geologists use the scientific method. Credit not given for both GEOL 008 and either 005 or 001.
- 010 Geological Oceanography** Characteristics and development of the oceans, their basins and shorelines, including plate tectonic history and basic physical, chemical, and biological processes. *Prerequisite:* 1 or introductory science course.
- 053 Planetary Geology** Characterizes the differences and similarities between the Terrestrial and Jovian Planets, the dynamic processes that shape our home planet and compares the geologic processes active in our Solar System. *Prerequisites:* Introductory science course or ASTR 5.
- 055 Environmental Geology** Introduction to geologic processes and materials pertinent to environmental problems: ground water movement, supply, and contamination, waste disposal, flooding, subsidence, and landslides. Local field trips. Designed for intended natural science majors.
- 062 Earth Env & Life Through Time** This course presents an overview of how the Earth has changed over time and how this

rent enrollment in 241.

245 Carbonate Depositional Environ Paleoenvironmental analysis of carbonate rocks including selected readings, field investigations, and petrographic studies. *Prerequisite:* 153. Alternate years.

247 Carbonate Petrology Lab Study of carbonate rocks in hand specimen and thin section. *Prerequisite:* Concurrent enrollment in 245.

255 Geohydrology Field-based projects address hydrologic processes in geological context; precipitation, runoff, ground water flow, river behavior, and hillslope stability. Stresses data analysis, writing, and practical approaches to water-related environmental problems. *Prerequisite:* Major in science or engineering or permission.

260 Structural Geology Examines processes and problems concerning the mechanical behavior of the Earth's crust and surface. Includes rock deformation stress, strain, and the interpretation of geological structures. *Prerequisites:* 101, 110, Physics 11 or permission.

261 Geodynamics Examines physical evolution of the Earth on regional to global scale. Project oriented, focusing on analysis and interpretation of geologic and geophysical data. *Prerequisites:* GEOL 101 and 110 or permission. UG only.

272 Regional Geology Discussion of the geology of a selected region of North America; a four-week summer field trip to the area in question. *Prerequisites:* 101, 110, 272a for 272b or equivalent.

273 Geology of the Appalachians Origin of mountain belts; the Appalachian mountain system discussed in terms of tectonics and geologic processes active in modern continental margins. *Prerequisites:* 101, 110, or permission.

278 Principles of Aquatic Systems (See Natural Resources 278.)

295, 296 Advanced Special Topics See Schedule of Courses for specific titles.

001 Elementary An introduction to all aspects of contemporary standard German: Speaking, listening, reading, writing. Cultural components include topics such as: music, art, literature, and current events. No previous knowledge of German needed for 1.

002 Elementary An introduction to all aspects of contemporary standard German: Speaking, listening, reading, writing. Cultural components include topics such as: music, art, literature, and current events. *Prerequisite:* GERM 1 or equivalent.

051, 052 Intermediate Comprehensive review of German grammar, vocabulary-building skills, development of reading strategies and compositional abilities, study of contemporary German culture through literary texts. *Prerequisite:* 1, 2 or equivalent for 51.

095, 096 Special Topics See Schedule of Courses for specific titles.

103 Composition & Conversation An intensive language course concentrating on more advanced syntax, vocabulary building, and idiomatic expression through written compositions, translations, and oral presentations. *Prerequisite:* 52 or equivalent.

104 German News Media Analysis of journalistic style and content in news coverage of contemporary events as reported in newspapers, magazines, radio, and television in German-speaking countries. *Prerequisite:* 52 or equivalent.

121 Culture & Civilization to 1900 Historical, intellectual, and artistic developments of German culture and civilization from Roman times through the 19th century, stressing written and oral work. *Prerequisite:* 52 or equivalent.

122 20th C Culture & Civilization Social, cultural, and political developments in the German-speaking countries since 1900, stressing written and oral components.

Prerequisite: 52 or equivalent.

155 Survey of German Lit to 1830 Selected prose, drama, and poetry from Medieval through Baroque literature, in-depth readings and analyses of major works by Lessing, Goethe, Schiller, and the Romantics. *Prerequisite:* 52 or equivalent.

195, 196 Intermediate Special Topics Major literary and intellectual movements and figures of the period through in-depth analyses of works by Buchner, Mann, Kafka, and Brecht. *Prerequisite:* 52 or equivalent.

195, 196 Intermediate Special Topics See Schedule of Courses for specific titles.

197, 198 Readings & Research

201 Methods Research & Bibliography Introduction to tools and methods of research, including major biblio-

sophical, and sociopolitical contexts. *Prerequisite:* 155 or 156 and one other 100-level course.

264 German Lyric Poetry The lyric genre and the historical development of German poetry from the age of Goethe to the present. *Prerequisite:* 155 or 156 and one other 100-level course.

271 Proverbs Diachronic and synchronic survey of German proverbs, proverbial expressions, and wellerisms, emphasizing their use and function in literature, art, mass media, advertisements and oral communication. *Prerequisite:* 155 or 156 and one other 100-level course.

273 German Intellectual Movements A survey of developments in art, music, philosophy, and social thought from the Enlightenment to 1945, with particular attention to their impact on German literature. *Prerequisite:* 155 or 156 and one other 100-level course.

275 Fin-de-Siecle Prevalent literary and intellectual movements at the turn of the 20th century in their historical, sociopolitical, and cultural contexts. Study of Nietzsche, Freud, Rilke, Hofmannsthal, Schmitzler, and Mann. *Prerequisite:* 155 or 156 and one other 100-level course.

276 Brecht & the Modern Drama Brecht's revolutionary concept of "epic theatre" in theory and practice and its influence on subsequent dramatists, including Durrenmatt, Frisch, Handke, Hochhuth, Muller, and Weiss. *Prerequisite:* 155 or 156 and one other 100-level course.

278 GDR Fiction GDR fiction in its literary, historical, and social contexts, with reference to major developments in the GDR from 1949-89. *Prerequisite:* 155 or 156 and one other 100-level course.

279 German Short Story after 1945 Aesthetic and thematic evolution of the short story and its relation to historical, political, and cultural developments from 1945 to the present. *Prerequisite:* 155 or 156 and one other 100-level course.

281 Sem in Lit Genre, Period, Theme Study of a literary genre, period, or theme through close readings of representative texts supplemented by lectures and reports on sociocultural context. May be repeated. *Prerequisite:* 155 or 156 and one other 100-level course.

282 Sem on Particular Author Study of author(s) through close readings of representative texts supplemented by lectures and reports on the works' sociocultural context. May be repeated. *Prerequisite:* 155 or 156 and one other 100-level course.

295 Advanced Special Topics See Schedule of Courses for specific titles.

296 Special Topics See Schedule of Courses for specific titles.

295 Special Topics UG only.

172 Chinese Lit in Translation

Development and Family Studies through integrating academic service-learning in developmental settings with critical thinking about development. *Prerequisite:* Majors only.

005 Human Development A comprehensive survey of life span individual and family development within social and historical context.

020 Aging: Change & Adaptation (Same as Nursing 20 and Sociology 20.) Individual and social meanings of aging and old age; physical, physiological, psychological, and sociological changes accompanying aging; individual, family, community, and societal adaptations to aging.

055 Special Topics I

060 Family Context of Development Developmental ecological approach to analysis of the family as a system in which individuals develop.

065 Human Relationships & Sexuality Sexual responsibility and the biological, social, psychological growth, and development of human beings in terms of sex role identity.

152 Biology of Aging (Same as Nursing 100.)

161 Social Context of Development Developmental ecological approach to analysis of social institutions as influences on human development. Focus on education, community, health care, and social services. Pre/co-requisite: HDFS 060.

167 Sexual Identities Exploration of diverse lesbian, gay, bisexual, and/or transgender identities, families, and communities, and their current personal, social, and cultural meanings and contexts. *Prerequisites:* Three hours in Human Development or related field; sophomore standing.

195 Special Topics Lectures, laboratories, readings, or projects relating to contemporary areas of study. Enrollment may be more than once, accumulation up to 12 hours. *Prerequisite:* Varies with course.

197 Readings & Research

200 Contemporary Issues UG only.

260 Family Ecosystem Family viewed in and as an environment for human development. The family ecological approach applied to practical family concerns. *Prerequisites:* Senior standing or instructor's permission.

263 Advanced Child Development Survey of professional literature in child development with special emphasis on influence of early life experiences throughout the life cycle.

264 Contemporary Issues Parenting Contemporary cultural factors that influence adult lifestyles and their relationship to successful parenting. *Prerequisites:* Nine hours in Human Development or instructor's permission. May be taken more than once.

265 Teaching Human Development

266 Seminar in Human Development Intensive study of issues in human development and their application in a wide variety of professional areas. May be taken more than

once. *Prerequisite:* Three hours in Human Development or instructor's permission.

ences, the class will build and apply to contemporary issues and populations an ideal public health service model.

115 Women's Health & Advocacy Aims to demystify women's health care issues through understanding options/choices concerning sexuality, contraception, reproductive health, sexually transmitted diseases, relationships, addictive disorders, anxiety/depression and more.

120 Health Care Ethics A study of ethical principles and applications used to help resolve dilemmas in health care delivery. Introduction to ethical decision-making models used in the practice of modern health care.

124 Mental Health and Aging Course will cover the main theories of older adult development and aging as well as the latest research on psychological and emotional changes with aging.

140 Issues in Women's Health A holistic exploration of the health care needs of women. This course will consider the stereotypical, theoretical, and clinical approaches of care used in treating women. *Prerequisites:* PSYC 1, HDFS 5, Sociology course below 100.

141 Healing Touch Level I Healing Touch is an energy based therapeutic approach to healing which uses touch to influence the energy system thus affecting physical, emotional and spiritual health and healing.

142 Healing Touch Level 2 The second level of Healing Touch includes an intake interview, back techniques, and a full healing sequence. Emphasis in the experimental learning is on developing sequences for specific client needs. *Pre/Co-requisites:* HLTH 141.

195, 196 Special Topics Intermediate courses on health topics beyond the scope of departmental or college offerings. See schedule of courses for specific titles.

295, 296 Special Topics Advanced courses on health topics beyond the scope of departmental or college offerings. See schedule of courses for specific titles.

095, 096 Introductory Special Topics See schedule of courses for specific titles. Cross-listings: Bio 95, 96.

295, 296 HLX/EpScor HS Summer Outreach Teams of a high school science teacher and two students apprentice with UVM faculty in research in preparation for an academic year of research. *Prerequisites:* Permission of HELIX/EPSCOR coordinator 656-0706.

095, 096 Introductory Special Topics This seminar accompanies the visit of the Carol G. Simon Speaker to the John Dewey Honors Program each spring. *Prerequisite:* Admission to the John Dewey Honors Program. Satisfactory/Unsatisfactory.

101 Thesis Proposal Seminar A one-credit course designed to assist students in the production and submission of a College Honors Proposal. *Prerequisite:* JDHP students or by permission; junior standing.

195 Intermediate Special Topics This seminar is usually taken by John Dewey Honors Program students in their Junior year. See schedule of courses for specific titles. *Prerequisite:* Admission to the John Dewey Honors Program.

196 Honors

201 JDHP Thesis Seminar This seminar brings John Dewey Honors Program students writing their college honors theses together in semi-monthly meetings to share their research problems, concerns and findings. Satisfactory/Unsatisfactory.

202, 203 Honors: Anthropology

204, 205 Honors: Studio Art

206, 207 Honors: Art History

208, 209 Honors: Biology

210, 211 Honors: Botany

212, 213 Honors: Chemistry

214, 215 Honors: Classics

216, 217 Honors: Communication Science

218, 219 Honors: Economics

220, 221 Honors: English

222, 223 Honors: French

224, 225 Honors: Geography

226, 227 Honors: Geology

228, 229 Honors: German

230, 231 Honors: Greek

232, 233 Honors: History

234, 235 Honors: Area & Int'l Studies

236, 237 Honors: Latin

240, 241 Honors: Music

242, 243 Honors: Philosophy

244, 245 Honors: Physics

246, 247 Honors: Political Science

248, 249 Honors: Psychology

250, 251 Honors: Religion

252, 253 Honors: Russian

254, 255 Honors: Sociology

256, 257 Honors: Spanish

258, 259 Honors: Theatre

260, 261 Honors: Environmental Studies

262, 263 Honors: Women's & Gender Studies

264, 265 Honors: Individually Designed

266, 267 Honors: Computer Science

268, 269 Honors: Italian Studies

273, 274 Honors: Film/Television Studies Contact Department for specific Requirements. *Pre/Co-requisites:* FTS 7, 8, or 9 and 121.

275, 276 Honors: Biochemistry

277, 278 Honors: Environmental Sciences

288, 289 Honors: Mathematics

200 History American Architecture Study of architectural history to gain fluency in the stylistic terms so essential to historic preservation and to public support for conserving our architectural heritage. *Prerequisites:* Open to non-HP majors by permission.

201 History on the Land Identifying and interpreting evidence of the cultural forces - early settlement patterns, transportation, industry, agriculture, planning, conservation - that have shaped our land, buildings, towns and cities. Cross listings: HST 201, ENV 295.

202 Special Topics Courses are offered under this number in specialized areas of historic preservation through Continuing Education.

204 Historic Pres: Devlpmnt Econ Survey of economic, financial aspects of real estate development pertaining to preservation and adaptive use of historic buildings (market studies, pro-formas). Field trips. Actual proposal development for underutilized properties. *Prerequisite:* 201.

205 Historic Preservation Law Legal issues in conservation of the built environment. Basic legal techniques for protection of historic structures (historic districts, protective legislation, easements, covenants). Study of significant court decisions. *Prerequisite:* 201.

206 Rschg Historic Structure/Sites Methods for researching historic structures and sites using archival and physical evidence, deciphering archaic building technologies, and documenting structures through professional reports, architectural photography, measured drawings. *Prerequisite:* HP majors or by permission.

017 German Literature: Translation See Schedule of

Courses for specific titles; Crosslisted with WLIT 17.

026 Europe, 1815-1945 Europe from the fall of Napoleon to the end of World War II, focusing on political, social, economic, and intellectual developments. Crosslisted with HST 26.

027 Modern Eastern Europe Eastern Europe since 1772, especially areas comprising present-day states of Bosnia-Herzegovina, Croatia, the Czech Republic, Hungary, Macedonia, Poland, Slovakia, Slovenia, and Yugoslavia. Focus on politics and culture of nationalism. Crosslisted with HST 27.

095, 096 Introductory Special Topics See Schedule of Courses for specific titles.

115 History of Poland History of the Polish people and

Asian-Americans, and Native Americans in U.S. Racism, conquest, slavery, exploitation, civil rights, militancy, liberation movements, and cultural renaissance.

095, 096 Introductory Special Topics See Schedule of Courses for specific titles.

109 The British Isles, 1350-1688 Examines the social, cultural, and political history of the British Isles from 1350 to 1688, focusing on institutions, religious beliefs, literature, art, and everyday life. *Prerequisite:* 6 hours of history.

110 Britain Since 1688 Examines the social, cultural, and political history of Britain since 1688, focusing on social movements and relations, gender, industrialization, popular culture, and the world wars. *Prerequisite:* 6 hours of history

115 History of Poland History of the Polish people and Polish state from the 10th century to the present. Strong emphasis on the 20th century. *Pre/Co-requisites:* HST 10 or 26 or 27. Cross-listed: HS 115

116 Medieval Mystics & Heretics This course covers the explosion of new religious ideas that characterized the period 1100-1500, and the Church's response to these challenges. *Pre/Co-requisites:* Hst 23 or 24, or 6 hours of History, or Instructor Permission.

117 Medieval Urban Legends Examines legends from

world, 1914-present. *Prerequisites:* 10 or 12.

177 American Revolution Survey of the Revolutionary Era, 1760-1791. Causes of the Revolution, War for Independence, establishment of the Constitution. *Prerequisite:* Six hours of history or other social sciences of which History 25 is highly recommended.

179 U.S. History Since 1960 Topical review of U.S. history since 1960, emphasizing problems of interpreting and reconstructing the recent past. *Prerequisite:* 12.

181 Film and History Topics in the history of American and European cinema and society, focusing on the filmmaker as historian and the film as historical artifact. *Prerequisite:* Three hours history or film.

182 History of Women in the US (Same as Women's Studies 161.) Survey of the origins and changes in images, status, and roles of women in American society since the colonial period. *Prerequisite:* Three hours in history (11 or 12 recommended), or Women's Studies minor.

183 US Military History Development of the U.S. military establishment within the framework of U.S. history from the Colonial era to the present. *Prerequisite:* 10 or 11 or 12.

184 Vermont History Survey of Vermont history from early times to the present. *Prerequisite:* 11 or 12.

187 Afr Amer Hst:1619 to Civil War Economic, social, political, and intellectual developments in U.S. history as they have affected and been affected by African-Americans, 1619 to Civil War. *Prerequisite:* Three hours history.

188 Afr Amer Hst:Civil War-present Economic, social, political, and intellectual developments in U.S. history as they have affected and been affected by African-Americans, Civil War to present. *Prerequisite:* Three hours history.

189 Hist African-American Women An exploration of the experiences of women of African descent from their arrival in America to contemporary times. *Prerequisites:* Any one of the following: History 11; 12; 182, 187, 188; Women's Studies 73; 174, 235, 273.

190 The Holocaust Study of the background, events, and aftermath of the Holocaust in Nazi Germany and Europe under German control. *Prerequisite:* 10 or 26 or 27 or instructor's permission.

191 World War II Causes, conduct, and consequences of global war from 1931-1945, including social, economic, political, and diplomatic as well as military aspects. *Prerequisite:* 10 or 12 or 26 or 51.

192 Sp Meth Sec Ed for Soc Studies (Same as Education 179.) Social studies curricula and selected social studies topics. (Not acceptable toward fulfilling Arts and Sciences College major requirements.) *Prerequisite:* Acceptance in teacher certification program.

195, 196 Intermediate Special Topics See Schedule of Courses for specific titles. *Prerequisites:* Six hours of history or permission.

197, 198 Readings & Research *Prerequisites:* May be prescribed by an individual instructor; junior or senior standing.

199 Internship in History Supervised cooperative internship work in history in archives, museums, libraries, etc. To be individually arranged for each student. *Prerequisite:* Junior or senior standing, department permission.

201 History on the Land (Same as Historic Preservation 201; Art 201.)

209, 210 Seminar in Global History Selected topics on the nature and results of interactions among the world's peoples. 209: to 1500. 210: since 1500. *Prerequisites:* Junior, senior, or graduate standing; 12 hours of history including 9 or 10.

221, 222 Seminar in Ancient History (See Classics 221, 222.)

224 Seminar in Medieval Europe Selected topics on Europe from the Fall of Rome to the Renaissance. *Prerequisites:* Twelve hours of history including 23 or 24; junior, senior, or graduate standing.

225 Seminar in Early Modern Europe Selected topics on European history from the Renaissance to the French Revolution. *Prerequisites:* Junior, senior, or graduate standing and 12 hours of history.

226, 227 Seminar in Modern Europe Selected topics

61 and 62, and contact program for specific requirements.

001 Elementary I Fundamentals of Italian composition, comprehension, pronunciation, speaking, reading, writing. Structure of the basic Italian sentence. No prior knowledge expected.

002 Elementary II Continuation of 1. *Prerequisite:* 1 or equivalent.

051 Intermediate Rdg & Conv I Designed to help students move from a basic knowledge of Italian to the ability to read, speak, and understand Italian better. Some grammar review and short compositions. *Prerequisite:* 2 or equivalent.

052 Intermediate Rdg & Conv II Continues building

227 Roman Lyric Poets Selections from the works of Catullus, Horace, Propertius, and Tibullus. Alternate years, as needed.

251 Roman Letters Letters of Cicero, Horace, and Pliny. Alternate years, as needed.

252 Comedy Two plays of Plautus and Terence. Study of the precursors of this literary form. Alternate years, as needed.

253 Roman Oratory Selections from Cicero's *De Oratore*, *Orator*, *Brutus*, and from his speeches. Historical development of forensic and other rhetorical canons. Alternate years, as needed.

255 Historians of the Empire Historians of the Empire. Augustus, *Res Gestae*; Tacitus, *Annals*, I-IV; selections from Suetonius and Ammianus Marcellinus. Alternate years, as needed.

256 Satire

121 Calculus III Vectors, vector-valued functions. Calculus of functions of several variables: partial derivatives, gradient, divergence, curl, multiple integrals, line integrals, Stokes' and Green's theorems. *Prerequisite:* 22.

124 Linear Algebra Matrices, linear dependence, vector spaces, linear transformations, characteristic equations and applications. Prerequisites: 22 or instructor's permission. Corequisite: MATH 121 recommended but not required.

141 Real Analysis in One Variable Principles of analysis in one variable. Heine-Borel and Bolzano-Weierstrass theorems; rigorous development of differential and integral calculus infinite sequences and series of functions. *Prerequisite:* 52.

151 Groups and Rings An introduction to the basic concepts of abstract algebra emphasizing examples, including modular arithmetic, symmetric groups, cyclic groups, polynomial rings, homomorphisms, and isomorphisms. *Prerequisite:* 52.

161 Development of Mathematics Historical development of mathematical sciences emphasizing interrelations among them. Individual assignments correspond to background and interests of students. *Prerequisite:* Nine hours of college mathematics.

and the Four Color Theorem, networks. *Prerequisite:* 52 or 54 or instructor's permission.

274 Numerical Linear Algebra Direct and iterative methods for solving linear equations, least square factorization methods, eigenvalue computations, ill-conditioning and stability. *Prerequisite:* 237.

275 Advanced Engineer Analysis I (Same as Mechanical Engineering 304, 305; Civil Engineering 304, 305.) *Prerequisites:* 271 or 230; 275 for 276.

276 Adv Engineering Analysis II (Same as Mechanical Engineering 304, 305; Civil Engineering 304, 305.) *Prerequisites:* 271 or 230; 275 for 276.

278 Intro Wavelets & Filter Banks Continuous and discrete-time signal processing. Continuous wavelet transform. Series expansion of continuous and discrete-time signals. Perfect reconstruction, orthogonal and biorthogonal filter banks. Wavelets from filter. *Pre/Co-requisites:* 171, or instructor permission. Cross-listing: EE 274.

283 Junior-Senior Seminar Students required to give presentations on selected topics. *Prerequisite:* Instructor's permission.

293, 294 Undergraduate Honors Thesis Program of reading and research culminating in written thesis and oral presentation. Honors notation appears on transcript and Commencement Program. Contact department chairperson for procedures. (Not offered for graduate credit.)

295 Special Topics For advanced students in the indicated fields. Lectures, reports, and directed readings on advanced topics. *Prerequisite:* Instructor's permission. Credit as arranged. Offered as occasion warrants.

001 First-Year Design Experience Introduction to the engineering profession and design. Hands-on experiences that emphasize interdisciplinary teamwork, technical communications, and project design methodologies. Cross-listings: EE 1.

012 Dynamics Kinematics and kinetics of particles and rigid bodies in two and three dimensions. Computer-aided analysis. *Prerequisites:* Civil Engineering 1, Math. 121.

014 Mechanics of Solids (Same as Civil Engineering 100.) Stress, strain, temperature relationships, torsion, bending stresses and deflections. Columns, joints, thin-walled cylinders. Combined stresses and Mohr's circle. *Prerequisites:* Civil Engineering 1, Math. 121, ME 12 or concurrent enrollment.

040 Thermodynamics Principles of engineering thermodynamics; applications of these principles to thermodynamic cycles. Credit not allowed for both 40 and 41. *Prerequisite:* Math 22, Physics 31 with 21.

042 Engineering Thermodynamics Properties and processes of fluids; perfect gases, and approximate relationships for real gases; applications of thermodynamics, principles of combustion, mixtures, power cycles, gas compression, and refrigeration. *Prerequisite:* 40.

044 Heat Transfer Introductory treatment of heat transfer by conduction, convection, and radiation. Corequisite: 40.

082 Mech Engineering Lab I Computer methods in mechanical engineering. Introduction to scientific programming: solids modeling and stress analysis. *Pre/corequisite:* CE 1.

095 Special Topics One to three hours with instructor's approval.

231 Bioinformatics Introduction to current topics in bioinformatics. Applications may include sequence alignment, dynamic programming, hidden Markov models, phylogenetics trees, microarray data analysis, genomics, and proteomics. *Prerequisites:* Instructor's permission; STAT 151, CS 26, and MMG 102 desirable. (Cross-listed with CS 231). Fall.

240 Macromol Struct Prot&Nucl Acid Introduction to structural biology and macromolecular structure with an emphasis on protein-protein and protein-nucleic acids interactions. *Prerequisites:* Biology 1, 2; Organic Chemistry; Junior standing recommended; concentration in Physics. (Cross-listed with BIOC 240) Alternate years, not approved for graduate credit. Spring.

262 Nature of Sensing and Response Examination of signal transduction pathways in widely divergent organisms, the evolutionary conservation of these pathways, and how these systems are perturbed by mutation and disease. Cross-listed with BOT 262. *Prerequisites:* BCOR 101, and either concurrent or past BCOR 103 or BOT 104, or permission.

295, 296 Special Topics Supervised investigations in microbiology or molecular genetics. *Prerequisite:* Instructor's permission. Credit as arranged.

297 Advanced Undergrad Research Undergraduate students are involved in advanced individual research projects sponsored by department member. Arrangement with individual department member and Undergraduate Program Director approval. *Pre/Co-requisites:* MMG 197/198 or Advisor's Permission.

298 Advanced Undergrad Research Undergraduate students are involved in advanced individual research projects sponsored by department member. Arrangement with individual department member and Undergraduate Program Director approval. *Pre/Co-requisites:* MMG 297.

019 UG Human Anatomy & Physiology Two-semester course with credit given only upon completion of both semesters. Structure and function of human body using cadaver prosections, histological material, and physiological experiments. Required of Medical Technology, Nursing, Nutritional Sciences, Dental Hygiene, Radiologic Technology, and Physical Education; others with instructor's permission. *Prerequisite:* 19 for 20.

020 UG Human Anatomy & Physiology Two-semester course with credit given only upon completion of both semesters. Structure and function of human body using cadaver prosections, histological material, and physiological experiments. Required of Medical Technology, Nursing, Nutritional Sciences, Dental Hygiene, Radiologic Technology, and Physical Education; others with instructor's permission. *Prerequisite:* 19 for 20.

191, 192 Undergraduate Research Individual laboratory research under guidance of faculty member. *Prerequisite:* Departmental permission.

201 Human Physiology & Exercise A comprehensive, in-depth presentation of the scientific basis of human function. Primarily for Physical Therapy students; a limited number of others may be admitted with permission. *Prerequisites:* Chemistry 23 and 42 or equivalent, two semesters general physics, one semester mathematics, permission. UG only.

202 Human Physiology & Exercise A comprehensive, in-depth presentation of the scientific basis of human function. Primarily for Physical Therapy students; a limited number of others may be admitted with permission. *Prerequisites:* Chemistry 23 and 42 or equivalent, two semesters general physics, one semester mathematics, permission. UG only.

011 Intro to ROTC & US Army Discussion of the customs, traditions, branches, organization, as well as the many changes in the roles and missions of the Army of the 21st century. Includes a non-credit laboratory to develop, practice and refine leadership skills in a variety of positions.

012 Intro Mil Skills&Followership Development of basic skills of an Army officer, including navigation and communications. Students are exposed to leadership development exercises during leadership laboratories.

014 Orienteering Basic practical skills such as maps, compass, and environmental awareness. Classroom participation, written exams, and completion of an orienteering course determine student grades. Open to all first-year and sophomore students. Cross-listed as PEAC 14. Fall/spring.

017 Military Fitness Develop individual potential to achieve physical and mental health. Vigorous workout three days a week designed to build both upper body strength and aerobic ability. Classroom participation and a final Army Physical Fitness Test determine student grades. Open to all first-year and sophomore students. Cross-listed as PEAC 17. Fall/spring.

019 Backpacking Techniques of planning and organizing a backpacking trip. Basic instruction includes clothing, equipment, and environmental awareness. Includes one overnight backcountry trek. Student grades determined by class participation and participation in the practical exercise. Open to all first-year and sophomore students. Cross-listed as PEAC 19. Fall/spring.

021 Leadership&Team Development Learning and application of ethics-based leadership skills that develop individual abilities and contribute to effective team building. Development of oral presentations, writing, and coordination of group efforts. Includes a non-credit laboratory to develop, practice, and refine leadership skills in a variety of positions.

022 Individual&Team Leading Techniques for training/counseling others as an aspect of continued leadership development. Includes safety and risk management assessments, and planning for individual and team safety. Includes a non-credit laboratory to develop, practice and refine leadership skills in a variety of positions.

131 Lead&Train Small Organizations Series of opportunities to lead small groups, receive personal assessments, and lead in complex situations. Plan and conduct training to develop leadership skills. *Prerequisite:* Completion of basic course program or basic camp. Includes a non-credit laboratory to develop, practice and refine leadership skills in a variety of positions. Fall.

132 Lead&Manage Small Organization Plan for and adapt to the unexpected in organizations under stress. Examine importance of ethical decisions in a positive climate that enhances team performance. Includes a non-credit laboratory to develop, practice and refine leadership skills in a variety of positions. *Prerequisite:* 131. Spring.

241 Ldrshp Challenges&Goal Setting Plan, conduct, and evaluate activities. Assess organizational cohesion and develop strategies for improvement. Develop confidence in skills to lead people and manage resources. Includes a non-credit laboratory to develop, practice and refine leadership skills in a variety of positions. *Prerequisite:* 132. Fall.

242 Lead Org Ethically&Competently Identify and resolve ethical dilemmas. Refine counseling and motivating techniques. Examine aspects of tradition and law related to leading as an officer in the Army. Includes a non-credit laboratory to develop, practice and refine leadership skills in a variety of positions. *Prerequisite:* 241. Spring.

001 Intro to Classical Music A survey of musical styles from Medieval Gregorian chant to the present. No prerequisite. May not be counted toward the major/minor.

004 Sound, Sense, and Ideas A writing-intensive course, exploring topics in Western, non-Western, folk, art, or popular repertoires. See Schedule of Courses for specific topics. Usually offered as a TAP course. No prerequisite. May not be counted toward the major/minor.

005 Introduction to Jazz History Survey of jazz from its roots in ragtime and blues of the late nineteenth century to contemporary styles. *Prerequisite:* Ability to read music, or permission of instructor.

006 American Music Survey of American music from the Pilgrims to the present. Folk, popular, and classical music. Vernacular and cultivated traditions. No prerequisites.

007 Intro to World Music Cultures Survey of Sub-Saharan, Indian, Indonesian, Latin and Native American, and Middle Eastern music through readings, recordings, and hands-on study of indigenous percussion instruments. No prerequisite.

021 Beginning Group Lessons Group lessons at beginning level in voice and various instruments. No prerequisites. May not be counted toward the major. May be repeated for credit.

022 Group Piano Intermediate group lessons in piano. *Prerequisite:* Ability to read music and proficiency on another instrument or voice. May not be repeated for credit.

023 Group Piano Advanced group lessons in piano. Scales, chords, sight-reading, chorales, and repertory. Course culminates in Piano Proficiency Exam. *Prerequisite:* 22, or instructor's permission. May be repeated for credit.

024 Group Jazz Piano I Introduction to jazz piano techniques, including rootless voicings, soloing, and comping, and covering basic chord progressions, blues, and standard tunes. *Prerequisites:* MU 022, MU/MUSE majors, minors, or instructor permission

025 Group Jazz Piano II Some review of concepts from MU 024. Exploration of topics including stride, modal comping, and chord substitution. *Prerequisites:* MU 024; MU/MUSE majors, minors or instructor permission

033, 034, 035, 036, 037, 038, 039, 040 Applied Lessons Private instruction in an instrument or voice for

126 Accompanying Lessons in piano accompanying for soloists, taught by piano and instrumental/vocal faculty. Juried performance expected. **127 University Catamount Singers**

Mixed, select SATB chamber choir. Performing vocal music from the medieval period to the present. Open to all students. *Prerequisite:* Audition.

128 Opera Workshop Study and performance of scenes from the operatic and musical theater repertory for the stage actor/actress.

129 Percussion Ensemble Percussion ensemble is open to all students. Repertory is chosen from the standard literature as well as improvisatory traditions of percussion music.

130 Chamber Music Study and performance of masterworks for small groups. Attendance at all rehearsals and public performances required. Outside practice required.

131 A & B Jazz Combos Small groups (a rhythm section and three to five solo instruments) in which students improve their improvisational skills while learning jazz repertory.

133 Applied Lessons Private instruction in an instrument or voice for music majors/minors in the freshman and sophomore years. Lab fee required. Juried examinations generally every semester of study. 133-136 for junior and senior music history and music theory concentrators only. Music education and performance concentrators only. Music education and performance concentrators must continue with 141 - 144.

134, 135, 136, 137, 138, 139, 140 Applied Lessons Private instruction in an instrument or voice for music majors/minors in the freshman and sophomore years. Lab fee required. Juried examinations generally every semester of study. 133 - 136 for junior and senior music history and music theory concentrators only. Music education and performance concentrators must continue with 141 - 144.

141, 142, 143, 144 Applied Lessons Private instruction in an instrument or voice for majors (performance and music education concentrators) in the junior and senior years. Lab fee required. Juried examinations generally every semester of study.

149 Soph Recital/Performance Sem B.M. Candidates only.

150 Junior Recital B.M. Candidates only.

153 Harmony and Form III Advanced chromatic harmony, including altered subdominant and dominant functions; study of free forms, the art song, and the late 19th c. character piece. With accompanying lab. *Prerequisite:* 55 and 56, or instructor's permission.

154 Harmony and Form Lab III Intensive study of solfege (music reading), chromatic harmony at the keyboard, dictation and open-score reading. *Prerequisite:* 56, or instructor's permission.

155 Harm & Form IV:20th C Tech Writing and analysis: extended tonality, 12-tone techniques and neotonality. Examples drawn from seminal works of the 20th century. With accompanying lab. *Prerequisite:* 153 and 154, or instructor's permission.

156 Harmony and Form Lab IV Intensive study of solfege (music reading), extended tonality and atonality at the keyboard, dictation, and open-score reading. *Prerequisite:* 154, or instructor's permission.

157 Composition Preliminary studies in free composition and the mechanics of score preparation; composition of an extended work for one to five instruments or voices. *Prerequisite:* 153, or equivalent, with instructor's permission.

159 Theory/Prac Jazz Improv I Basic repertory, idiomatic usage, aural skills, theoretical constructs, and strategies for the jazz improviser. *Prerequisite:* intermediate instrumental skill, ability to read music, previous study of traditional music theory.

176 Music for Elem Teachers Development of musical skills, understandings, and attitudes for teaching music in the elementary classroom. *Prerequisite:* Sophomore standing in elementary education, and early childhood majors only; or

acceptance into licensure program.

181 Conducting Baton technique, score reading, and laboratory practice. Preparation and performance of selected scores, including rehearsal procedures. *Prerequisite:* 153, 154.

195, 196 Special Topics Courses on topics beyond the scope of existing departmental offerings. See schedule of courses for specific titles. *Prerequisite:* 53-56. Majors/minors or instructor's permission.

201 Composer Seminar Survey of the musical style of one or more composers. Context, history, legacy. Past offerings have included Bach, Beethoven, Stravinsky, and Ellington. See Schedule of Courses for specific topics.

203 Genre Seminar Survey of the musical style within a genre. Context, history, legacy. Past offerings have included piano literature, choral literature, and bebop. See Schedule of Courses for specific topics. *Prerequisites:* 53-56, and either 111 or 112.

205 Period Seminar Survey of music from a particular historical era. Context, composers, legacy. Past offerings have included music of the twentieth century, Baroque music, and twentieth century blues traditions. *Prerequisite:* 53-56, and either 111 or 112.

211 Senior Music History Project Directed readings and research. Research project. *Prerequisite:* 53-56, 153-56, and senior standing as a music history major.

221 Concert Band Concert Band is open to all students. Repertory is chosen from the standard literature as well as contemporary music.

222 University Concert Choir Mixed SATB choir. Performing choral masterworks from the baroque period to the present. Open to all students.

223 Orchestra Full orchestra comprising strings, woodwinds, brass, and percussion. All university students may audition. Several performances each year.

224 University Jazz Ensemble Exploration of classic big band repertory and works of contemporary composers and arrangers. Performance in one major concert every semester and occasional appearances off campus. *Prerequisites:* Audition and instructor permission

225 Vermont Wind Ensemble Vermont Wind Ensemble is a select group, open to all students. Repertory is chosen from the standard literature as well as contemporary music. *Prerequisite:* Concurrent enrollment in 121.

226 Accompanying Lessons in piano accompanying for soloists, taught by piano and instrumental/vocal faculty. Juried performance expected.

227 University Catamount Singers Mixed, select SATB chamber choir. Performing vocal music from the medieval period to the present. Open to all students.

228 Opera Workshop Study and performance of scenes from the operatic and musical theater repertory for the stage actor/actress.

229 Percussion Ensemble Percussion ensemble is open to all students. Repertory is chosen from the standard literature as well as improvisatory traditions of percussion music.

230 Chamber Music Study and performance of masterworks for small groups. Attendance at all rehearsals and public performances required. Outside practice required.

231 A & B Jazz Combos Small groups (a rhythm section and three to five solo instruments) in which students improve their improvisational skills while learning jazz repertory.

250 Senior Recital

251 Advanced Theory:Counterpoint Contrapuntal forms and procedures: analysis and writing. Examples from 17th through 20th centuries. *Prerequisite:* 153, or instructor's permission.

253 Orchestration Characteristics of instruments; study of instrumental scores; arranging and instrumenting for ensembles. *Prerequisite:* 153, or instructor's permission.

256 Advanced Composition Creative work in free com-

position leading, when possible, to public performance of the completed work on a departmental concert. *Prerequisite:* 157, or equivalent, with instructor's permission.

257 Jazz Composition and Arranging Introduction to concepts and techniques used in jazz arranging and com-

lent. Spring.

260 Diet and Disease Examination of the physiologic, biochemical, and psychosocial basis of several disease states and the application of medical nutrition therapy in treatment. *Prerequisites:* 53, 143, 243, 244.

262 Community Nutrition Study of U.S. public health nutrition policies, programs and practices. Emphasis on community nutrition program planning including needs assessment, intervention development and evaluation. *Prerequisites:* 260 and senior standing. Spring.

263 Nutritional Biochemistry Comprehensive study of metabolism of carbohydrates, lipids, and protein emphasizing diet induced, hormone mediated alterations in metabolism (e.g. starvation and obesity). *Prerequisites:* 243 or instructor's permission. Spring.

274 Community Practicum Professional field experience in a community nutrition organization. Credit negotiable but not to exceed three per semester. Enrollment may be more than once, maximum of 6 credits. *Prerequisite:* Instructor's permission. (Not offered for graduate credit.)

295 Special Topics Lectures, laboratories, readings, or projects relating to contemporary areas of study. Credits negotiable. Enrollment may be more than once, maximum of 12 hours in 195 and 295 combined. *Prerequisite:* Departmental permission.

296 Field Experience Professionally-oriented field experience under joint supervision of faculty and business or community representative. Credit negotiable. Maximum of 15 hours in 196 and 296 combined. *Prerequisite:* Departmental permission.

including pollution, reduced biodiversity, climate change,

279 Watershed Management Hydrology Fundamental elements of hydrology and contaminant transport in watersheds. Application of dynamic simulation techniques. Discussion of new technologies for watershed management. *Prerequisites:* 170 or equivalent (or as a co-requisite), Math. 20, Physics 11, Chemistry 23, 26 or equivalent, senior standing.

280 Stream Ecology Ecology of streams including hydrodynamics, morphology, sediment transport, chemistry, biology and human impacts. Field and laboratory experience. *Prerequisites:* One year biology, one year chemistry, an ecology course. chemistry.

285 Advanced Special Topics Advanced special topics in natural resource planning beyond the scope of existing formal courses. *Prerequisites:* Graduate or senior standing, instructor's permission.

288 Ecol Design & Living Technol The course explores the potential for ecological design to shape a sustainable future. It analyses living technologies for food production, waste management and environmental restoration. *Pre/Co-requisites:* Jr/Sr standing; background in ecology/systems theory.

298 Honors 'Project' Planning Discussions leading to the development of an individual or group Senior Honors Project Proposal. *Prerequisites:* Junior standing; open only to SNR Honors Students. UG only.

299 Honors Honors project dealing with aquatic resources, terrestrial ecology, or integrated natural resources. *Prerequisite:* By application only; see program chair. UG only.

120 Pathophysiology This course is designed to provide the student with a comprehensive foundation in pathophysiology. The phenomena that result in dysfunction in human physiologic response will be examined. *Prerequisites:* ANPS 19,20. Recommended: MMG 65 or BMT 54.

135 Hlth Issues in Dev Countries Discussion of status and practice issues in developing countries including several Black African countries and Peoples' Republic of China. Historical, sociocultural, religious, political perspectives.

138 Critical Care Nursing Prepares the experienced registered nurse with the knowledge to competently manage

- 060 Badminton 4**
- 061 Bowling 1-4**
- 062 Bowling 3-4**
- 063 Horseback Riding 1-4**
- 064 Skating 1**
- 065 Figure Skating 1-4**
- 066 Inter Skating**
- 070 Racquet Sports**
- 071 Handball 1-2**

144.) Problems of liberty, e.g. freedom of expression, privacy, paternalism; scope and limits of the criminal law; philosophy of punishment; selected problems in criminal justice, e.g. plea bargaining; preventive detention. *Prerequisite:* 1, 3, 4, 95, 96 or Political Science 41. Offered once a year. (Political Science).

Prerequisite: 21.

137 Politics and The Media The role of the media in politics, including how media presentation and interpretation of events affect public opinion, political institutions, and public policy. *Prerequisites:* 21.

138 Const Law: Civil Liberties Investigation of the Supreme Court's interpretation of the First Amendment, rights of the accused, and the right to privacy. *Prerequisite:* 21.

139 Public Policy: Tools & Processes Examination of public policy process with particular focus on tools used to fashion public policy such as contracts, regulations, legislation, and presidential orders. *Pre/Co-requisites:* POLS 21.

141 History of Political Thought Development of Western political thought from Plato to Aquinas. *Prerequisite:* 41.

142 History of Political Thought Modern political thought from Machiavelli to Nietzsche. *Prerequisite:* 41.

143 Philosophy of Law I (Same as Philosophy 142.) Analysis of the nature of law, the relation between law and morality, obligation to obey the law, the judicial decision, responsibility in law, legal ethics. *Prerequisite:* 41 or Philosophy 1 or 3 or 4.

144 Philosophy of Law II (Same as Philosophy 143.) Problems of liberty, e.g. freedom of expression, privacy, paternalism; scope and limits of the criminal law; philosophy of punishment; selected problems in criminal justice. *Prerequisite:*

amination of selected topics related to the making and implementation of U.S. foreign policy. *Prerequisites:* 51, three hours at the 150 level.

263 Third World Foreign Policy The particular security and political economic challenges facing states in the process of nation-building in Latin America, Africa, Middle East, South Asia, Southeast Asia. *Prerequisites:* 51, three hours at the 150 level.

264 US-China Relations Examination of the historical context and various causes of the recurring tensions and unresolved issues in U.S.-China relations since 1945. *Prerequisites:* 51, one 100-level course.

265 East Asian Political Economy Examination of the historical, political, economic, and international factors for the rise of East Asia since the Second World War. *Prerequisites:* 51 or 71, one 100-level course.

266 Politics of the Persian Gulf Covers the political systems of the states bordering the Persian Gulf, the role of oil in regional politics and the international relations of the region. *Prerequisite:* POLS 157 or POLS 168 or permission of the instructor

270 Mexican Politics An in-depth examination of the Mexican political system. Topics will include an overview of Mexican history, one-party authoritarian rule, democratization, and political economy. *Prerequisites:* POLS 71, 174

272 Eastern European Pol Systems Examination of Eastern European political systems with emphasis on the role of ethnic conflict and Marxist-Leninist ideology. *Prerequisites:* 71, three hours at 100 level.

276 British Politics Topics include the role of the

235 Care Indv w/Alt in Mental Hlth Focus on individuals experiencing alterations in mental health. Through classroom and practicum students learn to holistically care for individuals experiencing alterations in mental health in a variety of settings. *Prerequisites:* PSYC 152, NURS 120; PRNU 127,128,129,130; Pre/corequisite: PRNU 131.

238 Caring For Select Populations This course provides students with the opportunity to focus on a clinical specialty area of their interest. *Prerequisites:* PRNU 129, 132 for OB/ped specialty; PRNU 234, 235 for Adult Health/psych/ICU/ED/OR/PACU specialty.

240 Contemp Iss&Ldrshp Prof Nursng Current issues and leadership in the nursing profession. Prominent issues in nursing are explored from a historical, political, and futuristic perspective. Strategies dealing with issues are formulated using theories of change and leadership. *Prerequisites:* PRNU 50, 110, 111, 113; NURS 120; PRNU 127, 128, 129, 130, 131, 132, 134, 234, 235; Corequisites: PRNU 241, 244.

241 Cmty/Public Health Nursing This course focuses on population health and community partnerships. Students will provide care to a defined community within their clinical groups and will work in collaboration with professionals in a variety of settings. *Prerequisites:* PRNU 50,110,111,113;NURS120;PRNU 127,128,129,130, 131, 132, 134, 231, 234,235; Corequisites: PRNU 240, 244.

244 Senior Practicum Provides students with the opportunity to focus on a clinical area of interest. Settings include health clinics, homes, hospitals, and long term care facilities. *Prerequisites:* PRNU 50, 110, 111, 113; NURS 120; PRNU 127, 128, 129, 130, 131, 132, 134, 234, 235; Corequisites: PRNU 240, 241.

263 Professional Nursing Practice Course will focus on health promotion for individuals, families, and groups recognized as marginalized within our society. Clinical settings used will focus on meeting the needs of people in marginalized groups. *Prerequisites:* PRNU 60, 111, 113.

involve original research, readings, internship, or assisting in teaching. *Prerequisite:* permission. More than a total of 6 credits per semester requires the chair's permission.

212 Ecological Farm Mgmt Applying basic ecological concepts and principles for practical farm management. Will cover integrated strategies for building healthy soils, integrated pest management and advanced agroecology concepts. *Pre/Co-requisites:* Senior in the Ecological Agriculture Major or Graduate Student. Pss 21, 106, 117, 161, 215 or permission.

215 Weed/Crop Ecology Weed identification, reproduction, ecological relationships with crops, and integrated management. *Prerequisites:* PSS 161 or permission. Alternate years.

217 Ecol & Mgmt of Grazing Systems Physiological and ecological relationships of pasture plants with grazing livestock; economic and ecological impact of grazing systems. (Alternate years) *Prerequisites:* PSS 11 and 143 or permission.

223 Sustainable Fruit Production Principles, theory and practice of fruit production and commercial fruit science. Propagation, culture, management and harvesting, and nutrition and cultural responses to various management practices. (Alternate years) *Pre/Co-requisites:* PSS 10 or 11 and 161 or permission.

261 Soil Morph Class & Land Use Field techniques that describe soil properties, formation, and classification. The principles and processes of soil genesis, land use classification systems, and land use challenges. *Prerequisite:* PSS 161 or permission. Alternate years.

264 Chemistry of Soil & Water An environmentally oriented study of the colloidal chemistry of soil and its interfaces with roots, water, and air. *Prerequisites:* PSS 161, two semesters chemistry or permission. Alternate years.

266 Soil Water Movement Mathematical modeling and physical principles of the soil-water-plant interaction and its relationship to environmental and agricultural issues. *Prerequisites:* PSS 161, one semester of physics or permission. Alternate years.

268 Soil Ecology Underlying concepts and theory of modern soil ecology will be reviewed including spatial and temporal distributions, sampling methods, biogeochemical cycles, and ecological functions of soil. *Pre/Co-requisites:* BCOR 102 or NR 103, PSS 161. Cross-listed with NR 268.

269 Soil/Water Pollution/Bioremed Examines key issues in pollution of soil and water. Topics include type of pollutants, their reactions in soil and water, pollution prevention and bioremediation. Alternate years.

281 Sr Seminar:Eco Ag/Lndscp Hrt Assessment of students' skills and activities designed to improve them. Including: writing, presentations, problem solving, critical thinking, management, leadership, conflict resolution and career and professional development. *Pre/Co-requisites:* Must be a senior in the Ecological Agriculture Major or the Sustainable Landscape Horticulture Major or permission.

295, 296 Advanced Special Topics Lectures, laboratories, readings, field projects, surveys, or research designed to provide specialized experience in horticulture, agronomy, soils, entomology, and integrated pest management. *Prerequisite:* Permission.

297, 298 Advanced Independent Study Individual projects under direction of a faculty member. Project may involve original research, readings, internship, or assisting in teaching. *Prerequisite:* Permission. More than a total of 6 credits per semester requires the chair's permission.

017 Comp/Writing Tool

019 Library Research

021 Creating Success

096 Sign Language

101 Career Planning: Part 1

102 Career Planning: Part 2

185 Lake Champlain

23 Preparing for GRE

25 Race Relations & Cultural Div

299 Visiting Grad

001 General Psychology Introduction to the entire field, emphasizing the behavior of the normal adult human being.

015 Improv Memory, Motiv & Cog Skills Theory and research on learning and memory, motivation, and cognitive skills. Emphasis on the application of principles to everyday life. *Prerequisite:* 1 or instructor's permission.

095, 096 Special Topics

104 Learning, Cognition & Behavior Behavioral and cognitive principles underlying learning, memory, and action inside and outside the laboratory. Includes conditioning, motivation, biological constraints, and mechanism of remembering and forgetting. *Pre/Co-requisites:* PSYS 001

109 Psychology Research Methods I Basic course in principles of research methodology, including design, statistical procedures, and reporting. Prepares students to understand and evaluate psychological research in a variety of areas of psychology. *Prerequisite:* 1.

110 Psychology Research Methods II More advanced methodology course for majors in psychology. Prepares students to conduct and report research in psychology, with special attention to experimental procedures in learning and cognition. Laboratory experiences. *Prerequisite:* 109.

111 Psychology of Decision Making Introduction to the study of individual and group decisions. Focus on "how," "how best," and "how reasonably" to decide. Attention to tricks and traps in the process. *Prerequisite:* 1. Summer only.

119 History of Psychology Review of major theoretical and empirical developments in psychology, including schools of psychology that have influenced contemporary models of psychology. *Prerequisites:* 1, junior or senior standing.

121 Biopsychology Biological bases of behavior: classical and contemporary issues, including introduction to nervous system, behavioral effects of drugs, chemical bases of behavioral disorders. *Prerequisite:* 1 or Biology 1.

130 Social Psychology An introduction to concepts and methods used to study the behavior of individuals in various social situations. *Prerequisite:* 1.

152 Abnormal Psychology Describing and defining abnormal behavior; models of etiology; research evidence for biological and social models; methods of intervention and prevention. *Prerequisite:* 1.

161 Developmental Psyc:Childhood Survey of research and theories on child development from conception to adolescence emphasizing experimental analyses of early social and cognitive development. *Prerequisite:* 1.

163 Psychology Mass Communication Survey of theory and research concerning mass media effects in children's socialization, information diffusion, and in shaping values, behaviors regarding health, politics, consumer choices, and environment. *Prerequisite:*

004 Chem Lab

010 Prep for Elem College Algebra

015 Transition:College

206 Motivation Theory and research on motives, including hunger, fear, sex drive, and addiction, their influence on behavior, relationship to other psychological processes, and biological correlates. *Prerequisite:* 109.

207 Thinking Survey of cognitive psychology, examining theory and research on perception, memory, language, cognition, and their interactions. *Prerequisites:* 109.

208 Cognition & Language (S08 T drive, and adisites:

095 Special Topics

201 Clinical Science & Practice Sem A comprehensive in-depth presentation of the scientific basis of human function. Primarily for physical therapy students; a limited number of others may be admitted with permission.

tive study of ways in which the inward dimension of religious life finds expression. *Prerequisite:* Three hours in religion.

108 Myth, Symbol & Ritual Study of patterns and significance of myth and ritual as they appear in cross-cultural perspective, with referenceto contemporary interpretations of symbol and language. *Prerequisite:* Three hours in religion.

109 Ritualization:Rel,Body,Culture A cross-cultural examination of ritual strategies for integrating personal and social experience, with attention to various theories and types of religious ritual. *Prerequisites:* Three hours in religion.

111 Western Religious Thought Study of ways in which Western religious thinkers-in both Greek and Biblical traditions-have expressed and responded to philosophical-theological questions about human existence, world, and God. *Prerequisite:* Three hours in religion.

114 Hebrew Scriptures Study of the history and writings of the Hebraic-Judaic religion to the first century B.C. *Prerequisite:* Three hours in religion.

116 Judaism Investigation of sustaining rituals, customs, institutions, and beliefs of normative Judaism. *Prerequisite:* Three hours in religion.

122 Christian Origins Historical study of the first four centuries of Christianity in its sociocultural context, including consideration of New Testament texts. *Prerequisite:* Three hours in religion.

124 Christianity Historical study of the Christian tradition examining major religious movements of early, medieval, and Reformation Christianity, and the spirituality of Christians during these periods. *Prerequisite:* Three hours in religion.

128 Religion in America Study of the relationship between religion, the cultural ethos, and identity in America. *Prerequisite:* Three hours in religion.

130 Islam Overview examining doctrines and practices of Muslims and their religious institutions from the rise of Islam to the present. *Prerequisite:* Three hours in Religion.

131 Studies in Hindu Tradition Selected writings, rituals, and developments in the Hindu tradition with reference to cultural assumptions of India. *Prerequisite:* Three hours in religion.

132 Buddhist Traditions A survey of Buddhist beliefs and practices in a diversity of cultures, including some modern developments. *Prerequisite:* Three hours in religion.

141 Religion in Japan An examination of Japanese values as expressed in folk, Shinto, and Buddhist traditions, and in social structures, aesthetic pursuits, or business practices. *Prerequisite:* Three hours in religion.

145 Religion in China Examination of Classical, Confucian and Taoist thought through texts in translation, developments in these traditions, and interactions with folk religion and Buddhism in the premodern period. *Prerequisite:* Three hours in religion.

151 Sacred Space & Environment Study of spiritual systems and cultural identities built around places on the land, environmental philosophies, and relationships with specific environments. Focus on Native American traditions. *Prerequisite:* 3 credits in Religion

168 Contemporary Spiritual Life Study of human involvement with the spiritual as manifested in contemporary religious groups, or in modern theory and practice of meditation. *Prerequisite:* Three hours in religion.

173 Studies in Gender & Religion Selected topics focusing on the social and religious construction of gender and the shape of women's religious lives. Religious traditions studied vary by seme morE

genre or period through close readings of representative texts supplemented by lectures and reports on sociocultural context. May be repeated. *Prerequisite:* One 100-level Russian course.

282 Seminar on Selected Author(s) Study of author(s) through close readings of representative texts supplemented by lectures and reports on the works' sociocultural context. May be repeated. *Prerequisite:* One 100-level Russian course.

295, 296 Advanced Readings & Research See Schedule of Courses for specific titles.

001 Introduction to Sociology Fundamental principles and problems in the sociological analysis of the structure and dynamics of modern society.

011 Social Problems Introduction to sociology through detailed examination of a selected number of major structural problems characteristic of contemporary societies. Problems treated may vary.

014 Deviance & Social Control Analysis of the causes and consequences of social behavior that violates norms. Examines patterns of deviant socialization and social organization and forms of deviance control.

019 Race Relations in the US Analysis of racial prejudice, discrimination, and other dominant group practices directed toward Native, Asian-, and African-Americans and their social movements for integration, accommodation, and separatism.

020 Aging: Change & Adaptation Individual and social meanings of aging and old age; physical, physiological, psychological, and sociological changes accompanying aging; individual, family, community, and societal adaptations to aging. Crosslists: Nursing 20 and Early Childhood and Human Development 20/Education.

029 Sex, Marriage & Family Description and analysis of contemporary patterns in American sexual, marital, and familial behavior; their historical development, variants, and the evolving alternatives to traditional normative forms.

032 Social Inequality Introduction to structured class inequality in the U.S., causes and consequences. Focus on wealth, prestige, and power. Inequalities of age, gender, and ethnicity also examined.

043 Survey of Mass Communication The historical development of the socioeconomic, political, educational, and religious impacts of the press, film, radio, and television in American society.

057 Drugs & Society Patterns of illicit drug distribution, use, abuse, and control in contemporary society. Examines the interaction of cultural, social, psychological, and physiological factors in prohibited drug-taking.

095, 096 Introductory Special Topics See Schedule of Courses for specific titles.

100 Fund of Social Research Introduction to research methods in social science. Includes examination of research design, measurement, data collection, data analysis, and the presentation and theoretical interpretation of research findings. *Prerequisite:* Three hours of sociology or six hours in a related social science. Crosslist: Political Science 181.

101 Developm't Sociological Theory Classical sociological theory including Marx, Weber, Durkheim, and Mead, as well as DuBois and early female theorists such as Martineau. Reading and writing intensive. *Prerequisites:* Six hours of sociology or equivalent preparation in another social science with instructor's permission.

102 Population, Environment & Soc Analysis of the causes and consequences of varying relationships among population size, distribution and composition, social organization, technology, and resource base. *Prerequisite:* Three hours of sociology.

103 Environ Crises Modern Society Examines global, national, and local ecological crises both empirically and

theoretically. Emphasis on economic processes, political/legal aspects, and social activism. *Prerequisite:* Three hours of sociology.

105 The Community Comparative examination of patterns of social interaction in social groups with common territorial bases in contemporary societies and the analysis of community structure and dynamics. *Prerequisite:* Three hours of sociology.

109 The Self & Social Interaction Analysis of the roles of sociocultural and situational factors in individual behavior and experience and the social genesis, development, and functioning of human personality. *Prerequisite:* Three hours of sociology or Psychology 1.

114 Sociology of Punishment This course explores the concept of punishment from sociological perspective. Focus is on analysis of formal and informal punishment, and the ironies of punishment/social control. *Prerequisite:* 3 credits sociology

115 Crime Analysis of the nature and types of behavior that violates law, the mechanisms for defining such behaviors as criminal and their causes and consequences. *Prerequisite:* Three hours of sociology.

118 Race, Crime&Criminal Justice A comprehensive examination of race, gender, and class on racial minorities' participation in criminal activities and how individuals are treated by the criminal justice system. *Prerequisite:* Three hours of sociology.

119 Race & Ethnicity (Same as Anthropology 187.) Description and analysis of ethnic, racial, and religious groups in the U.S. Examination of social/cultural patterns in the larger society and in these groups themselves. *Prerequisite:* Three hours of sociology.

120 Aging in Modern Society Analysis of contemporary needs and problems of the elderly, including discrimination, poverty, health care, and loneliness, and the evaluation of services and programs for the elderly. *Prerequisite:* Three hours of sociology or professional experience working with the elderly.

122 Women & Society Analysis of the changes in the role of women in contemporary society and their consequences for female socialization, the family, and the other major social institutions. *Prerequisite:* Three hours of sociology. Crosslist: WGST 101.

128 Sociology of Childhood Examination of socio-historical changes in the construction of childhood and experiences of children; applications of interpretive approaches in contemporary sociology to analyze children's peer cultures. *Prerequisites:* three hours Sociology.

130 Sociology of Heterosexuality Examination of heterosexuality as cultural production with attention to how

uisites: Three hours of sociology or six hours of religion.

154 Social Org of Death & Dying Comparative examination of sociocultural adaptations to mortality with special attention to family, medical, legal, religious, and economic responses to fatal illness and death in contemporary society. *Prerequisite*: Three hours of sociology.

155 Culture, Health and Healing Introduction to medical anthropology. Social and cultural perspectives on health and illness experiences, doctor-patient interactions, healing practices, and access to health and health care. *Prerequisites*: three hours of Sociology or ANTH 21. Crosslist: ANTH 174.

156 Sociology of Freakishness This course considers how American popular culture was born of the display of racial, cultural, sexual and bodily "freaks." *Prerequisite*: Three hours of sociology

161 Sociology of Leisure Analysis of the sociocultural organization of nonwork activity, emphasizing the relationships of class, life style, education, and work to contemporary recreation and leisure use patterns. *Prerequisite*: Three hours of sociology.

171 Soc Chng&Dev Persp in 3rd Wrld perspectives on development in the Third World. *Prerequisite*: Three hours in sociology.

195, 196 Intermediate Special Topics See Schedule of Courses for specific titles.

197, 198 Readings & Research

202 Population Dynamics Analysis of the factors affecting human population growth and distribution, migration patterns, and the relationship between economic activity and population trends. *Prerequisite*: Six hours of sociology including 1 and 100, or 1 and 101, or instructor permission.

203 Adv Environmental Sociology Examination of theoretical interpretations of environmental problems, sources, and solutions, focusing on the social conditions under which problems arise. Emphasis on writing and individual research projects. *Prerequisite*: Six hours of sociology including 1 and 100, or 1 and 101, or instructor permission. (not offered for Graduate credit)

205 Rural Communities in Mod Soc The changing structure and dynamics of rural social organization in context of modernization and urbanization. Emphasis on rural communities in the U.S. *Prerequisite*: Six hours of Sociology including 1 and 100, or 1 and 101 or instructor permission. Crosslist: CDAE 205.

206 Urban Communities in Mod Soc The changing structure and dynamics of urban social organization in context of modernization and urbanization. Emphasis on cities and metropolitan areas in the U.S. *Prerequisite*: Six hours of Sociology including 1 and 100, or 1 and 101, or instructor permission.

207 Community Org & Development Communities as changing sociocultural organizational complexes within modern society. Special attention given to problems of formulation and implementation of alternative change strategies. *Prerequisite*: Six hours of Sociology including 1 and 100, or 1 and 101, or instructor permission. Cross-list: CDAE 218

209 Small Groups Examination of the structure and dynamics of small groups and the interpersonal, informal network of relations that characterize the interaction of members. *Prerequisite*: Six hours of Sociology including 1 and 100, or 1 and 101, or instructor permission.

211 Soc Movements&Collective Behav Examination of origins, development, structure, and consequences of crowds, riots, crazes, rumors, panics, and political and religious movements and their relationships to cultural and social change. *Prerequisite*: Six hours of Sociology including 1 and 100, or 1 and 101, or instructor permission.

213 Women in Dev in 3rd World An examination of the meaning and measurement of development, sociodemographic characteristics, sex stratification, and

effects of Colonialism and Westernization on women's issues in the third world. *Prerequisites*: Six hours of Sociology including 1 and 100, or 1 and 101, or instructor permission. Crosslist: WGST 205.

214 Delinquency Analysis of the nature and type of juvenile behavior that violates law, the mechanisms for defining such behaviors as delinquent, and their causes and consequences. *Prerequisite*: Six hours of Sociology including 1 and 100, or 1 and 101, or instructor permission.

216 Criminal Justice Analysis of the social structures and processes involved in the identification and labeling of individuals as criminal offenders: criminal law, its enforcement and the courts. *Prerequisite*: Six hours of Sociology including 1 and 100, or 1 and 101, or instructor permission.

217 Corrections Analysis of the social structures and processes involved with individuals designated as offenders of criminal law: probation, prison, parole, and programs of prevention and rehabilitation. *Prerequisite*: Six hours of Sociology, including 1 and 100 or 1 and 101, or instructor permission.

219 Race Relations Examination of American racial subordination in social and historical perspective. Analysis of interracial contacts, racial subcultures and social structures, and responses to racial prejudice and discrimination. *Prerequisite*: Six hours of Sociology including 1 and 100, or 1 and 101, or instructor permission.

220 Internship in Gerontology Supervised service or research internship integrating theoretical and practical gerontological issues. *Prerequisites*: 6 hours of Sociology including 1 and 100, or 1 and 101 or instructor permission or 20, 120; 221 or 222; or equivalent gerontological preparation (Not offered for graduate credit.)

222 Aging & Ethical Issues Analysis of selected ethical issues posed by an aging society and faced by older persons, their families, health care and service providers, and researchers. *Prerequisite*: Six hours of Sociology including 1 and 100, or 1 and 101, or instructor permission.

223 Sociology of Reproduction Examines reproduction of cultural values in relation to social conduct of reproduction of human life (childbearing) under advanced capitalism. *Prerequisite*: Six hours of Sociology to include one of 29, 122, or 229. Crosslist: WGST 201. (not for Graduate credit)

225 Organizations in Mod Society Examination of basic classical and contemporary theory and research on the human relations, internal structures, environments, types, and general properties of complex organizations and bureaucracies. *Prerequisite*: Six hours of Sociology including 1 and 100, or 1 and 101, or instructor permission.

229 Family as Social Institution Examination of the institution of the American family in cross-cultural and historical perspective. Theories and research on family continuity, change, and institutional relationships explored. *Prerequisite*: Six hours of Sociology including 1 and 100, or 1 and 101, or instructor permission.

232 Social Class & Mobility Comparative and historical analysis of causes, forms, and consequences of structured social inequality in societies. Examination of selected problems in contemporary stratification theory and research. *Prerequisite*: Six hours of Sociology including 1 and 100, or 1 and 101, or instructor permission.

240 Political Sociology Examination of the social organizations of power and authority in modern societies and the dynamics and institutional relationships of political institutions, interest groups, parties, and publics. *Prerequisite*: Six hours of Sociology including 1 and 100, or 1 and 101, or instructor isite: 66965 -1.0:0d the

instructor permission.

250 Sociology of Culture The relations of cultural forms and subjective experience to social structure and power; in-depth applications of interpretive approaches in contemporary sociology. *Prerequisite:* Six hours of Sociology including 1 and 100, or 1 and 101, or instructor permission.

252 Sociology of Emotions Studies the theoretical premises of a sociocultural explanation of emotions; examines specific emotions such as respect, shame, hatred, love and compassion in humans; and explores the existence of emotions in non-human animals. *Prerequisites:* 3 hours Sociology including 1 and 100, or 1 and 101, or instructor permission.

254 Sociology of Health & Medicine The social organization and institutional relationships of medicine in society and the role of sociocultural factors in the etiology, definition, identification, and treatment of illness. *Prerequisite:* Six hours of Sociology including 1 and 100, or 1 and 101, or instructor permission.

255 Soc of Mental Health Analysis of the social structures and processes involved in the identification, definition, and treatment of mental illness and its sociocultural etiology and consequences. *Prerequisite:* Six hours of Sociology including 1 and 100, or 1 and 101, or instructor permission.

258 Sociology of Law Analysis of the sociocultural structure of the legal institution and its relationships to other institutions: the social organization of the legal profession, lawmaking, and the courts. *Prerequisite:* Six hours of Sociology including 1 and 100, or 1 and 101, or instructor permission.

272 Soc of African Societies Current social, cultural, political, and economic changes occurring in African societies, including issues of development, the state and civil society, social class, ethnonationalism, and democratization. *Prerequisite:* Six hours of Sociology including 1 and 100, or 1 and 101, or instructor permission.

274 Research Seminar Principles of research design, data gathering, ethics, measurement, data analysis, and data presentation. Students will complete a research project. *Prerequisites:* 6 hours of Sociology including 1 and 100, or 1 and 101, or instructor permission.

275 Meth of Data Anly in Soc Rsch Quantitative analysis of sociological data; includes table, regression, and path analysis, scaling and factor analysis, and the analysis of variance emphasizing multivariate techniques. *Prerequisite:* 6 hours of Sociology including 1 and 100, or 1 and 101, or instructor permission.

279 Contemporary Sociological Thry Critical examination of contemporary functional, conflict, exchange, interactionist, and structural theoretical approaches. A number of other theoretical approaches selected by seminar participants also examined. *Prerequisite:* 6 hours of Sociology including 1 and 100, or 1 and 101, or instructor permission.

281, 282 Seminar Presentation and discussion of advanced problems in sociological analysis. *Prerequisites:* Twelve hours of sociology, instructor's permission.

285, 286 Internship *Prerequisite:* Twelve hours of sociology including at least one 200-level course in substantive area relevant to field placement, departmental permission. UG only.

288, 289 Rsch Meth Teaching Sociology The development and evaluation of the teaching of sociology. *Prerequisites:* Twelve hours of sociology, permission of department. Open only to students who serve concurrently as teaching assistants in the Department.

295, 296 Advanced Special Topics See Schedule of Courses for specific titles. *Prerequisites:* 6 hours of Sociology including 1 and 100, or 1 and 100, or instructor permission.

297, 298 Readings & Research *Prerequisites:* 6 hours of Sociology including 1 and 100, or 1 and 101, or instructor permission.

001 Elementary I Fundamentals of Spanish composi-

tion, comprehension, pronunciation, speaking, reading, writing. Structure of the basic Spanish sentence. No prior knowledge expected.

002 Elementary II Continuation of 1. *Prerequisite:* 1 or equivalent.

009 Basic Spanish Grammar Review Thorough review of Spanish grammar in preparation for intermediate level. Considerable emphasis on written exercises.

051 Intermediate Language Study I Significant review of grammar, proceeding from basic knowledge of Spanish to increased proficiency in understanding, speaking, reading and writing. Compositions, oral practice, reading. *Prerequisites:* 02 or 09 or equivalent (Placement Exam, 2-3 years in high school, consultation).

052 Intermediate Language Study II Continues building on the skills developed in Spanish 51. More emphasis on accurate language usage and more extensive readings. *Prerequisite:* 51 or equivalent (Placement Exam, 3-4 years in high school, consultation).

095, 096 Introductory Special Topics Introductory courses or seminars on topics beyond the scope of existing departmental offerings. See Schedule of Courses for specific titles.

101 Composition & Conversation Writing practice, sentence structure, correct expression, and guided discussions in Spanish of assigned topics. A good command of basic grammar expected. *Prerequisite:* 52 or permission.

105 Phonetics & Phonology The sound system of Spanish: Spanish/English pronunciation contrasted; vowels, consonants, rhythms, intonation. Counts as major/minor elective, not for A&S language requirement. *Prerequisite:* 52 or permission.

109 Spanish Grammar An intensive study of Spanish grammar. Topical approach. *Prerequisite:* 52 or permission.

140 Analyzing Hispanic Literatures Introduction to basic genres of Hispanic literatures (narrative, poetry, drama, essay); development of analytical and critical reading/discussion skills. Short analytical papers and ample class discussion. *Prerequisite:* 101 or concurrent enrollment (with permission).

141 Intro To Literature of Spain An introductory survey of major developments in Spanish peninsular literature. Readings and discussions focus on textual analysis, and historical and cultural contexts. *Prerequisites:* 140 pre- or co-requisite.

142 Intro To Lit Spanish America Readings and discussion focus on textual analysis, and historical and cultural contexts. *Prerequisites:* 140 pre- or co-requisite.

195, 196 Intermediate Special Topics See Schedule of Courses for specific titles. *Prerequisite:* 140.

197, 198 Readings & Research Permission of chair required. *Prerequisite:* 140.

201 Adv Composition & Conversation To improve both written and oral proficiency. Textbook supplemented by panel discussions, debates, translation, and a weekly composition. *Prerequisite:* 101 or permission. (Not offered for graduate credit).

202 Topics in Spanish Lang Study Varied topics devoted to a special area such as translation, creative writing, Spanish for the professions (medicine, business, journalism, law), etc. *Prerequisite:* 101 or permission. (Not offered for graduate credit).

211 History of Spanish Language The evolution of the Spanish language from its origins to the present. *Prerequisites:* 140.

236 Poetic Voices/Cultural Change A topical approach to exploration of self and society in Spain's poetic voices before 1700. Verses range from humorous to amorous, from satirical to political. *Prerequisite:* 140.

237 Issues in Early Spanish Lit An exploration of topics on Spain's richly diverse literature written before 1700. Prose and/or theatre texts from this highpoint of cultural development are the focus. *Prerequisite:* 140.

246 Reading Cervantes A topical approach to the study of Cervantes, author of Don Quijote de la Mancha, and his

works' significance as a reflection of/on Spain's literary-cultural landscape. *Prerequisite:* 140.

250 Dilemmas of Modernity in Span Lit How Spanish writers since the Enlightenment have responded to the changes accompanying the arrival of "modernity". Topics may include questions of identity, democracy, traditional beliefs. *Prerequisite:* 140

252 Span Lit: Dictatorship-Democracy Literature in Spain from the Franco dictatorship to the present. Topics to include censorship and dissidence, writing-in-exile, and contemporary trends. *Prerequisite:* 140. UG only.

260 Gender in Hispanic Literatures A topical exploration of how Hispanic women writers and literary representations of gender-related issues reflect, expand and question literary and cultural norms. *Prerequisite:* 140.

261 Hispanic Writing from Margins Exploration of writers and communities at the margins of mainstream Latin-America and/or Spanish culture. Topics may include indigenous, Afro-Hispanic, regionalist authors; testimonial literatures; censorship. *Prerequisite:* 140

264 Border Literatures Introduction to border literatures of the Hispanic worlds. These texts partake of two or

sophomore standing.

151 Applied Probability Foundations of probability, conditioning, and independence. Business, computing, biological, engineering reliability, and quality control applications. Classical discrete and continuous models. Pseudo-random number generation. *Prerequisites:* Math. 12, 14, 20 or 22.

153 Prob & Stat for Cmptr Sci Foundations of probability, conditioning, independence, expectation and variance. Discrete and continuous probability distributions. Computer simulation examples. Introductory descriptive and inferential statistics. Simple regression analysis. *Pre/Co-requisites:* Math 20 or 22.

191 Special Projects Student-designed special project under supervision of a staff member culminating in a report. *Prerequisites:* Junior standing, permission of Program Director.

195 Special Topics Lectures, reports, and directed readings. *Prerequisite:* As listed in course schedule.

200 Med Biostatistics & Epidemiology (Same as Biostatistics 200.) Introductory design and analysis of medical studies. Epidemiological concepts, case-control and cohort studies. Clinical trials. Students evaluate statistical aspects of published health science studies. *Prerequisite:* 141 or 143; or 211.

201 Stat Analysis Via Computers (Same as Biostatistics 201.) Intensive coverage of computer-based data processing and analysis using statistical packages, subroutine libraries, and user-supplied programs. Students analyze real data and prepare a comprehensive report. *Prerequisites:* 111 with instructor's permission, or 141, or corequisite 211.

211 Statistical Methods I (Same as Biostatistics 211.) Fundamental concepts for data analysis and experimental design. Descriptive and inferential statistics, including classical and nonparametric methods, regression, correlation, and analysis of variance. Statistical software. *Prerequisite:* Junior standing.

221 Statistical Methods II (Same as Biostatistics 221.) Multiple regression and correlation. Basic experimental design. Analysis of variance (fixed, random, and mixed models). Analysis of covariance. Computer software usage. *Prerequisites:* 141 or 143; or 211.

223 Applied Multivariate Analysis (Same as Biostatistics 223.) Multivariate normal distribution. Inference for mean vectors and covariance matrices. Multivariate analysis of variance (MANOVA), discrimination and classification, principal components, factor analysis. *Prerequisites:* Any 200-level Statistics course, 221 or 225 recommended, matrix algebra recommended.

224 Stats for Quality & Productivity (Same as Biostatistics 224.) Statistical process control; Shewhart, cusum and other control charts; process capability studies. Total Quality Management. Acceptance, continuous, sequential sampling. Process design and improvement. Case studies. *Prerequisites:* 141 or 143; or 211.

225 Applied Regression Analysis (Same as Biostatistics 225.) Simple linear and multiple regression models; least squares estimates, correlation, prediction, forecasting. Problems of multicollinearity and influential data (outliers).

227 Adv Statistical Methods II (Same as Psychology 341.) *Prerequisite:* 211 with computer experience or Psychology 340.

229 Survival Analysis (Same as Biostatistics 229.) Probabilistic models and inference for time-to-event data. Censored data, life tables, Kaplan-Meier estimation, logrank tests, proportional hazards regression. Specialized applications (e.g. clinical trials, reliability). *Prerequisites:* Any 200-level Statistics course, one year of calculus.

231 Experimental Design (Same as Biostatistics 231.) Randomization, complete and incomplete blocks, cross-overs, Latin squares, covariance analysis, factorial experiments, confounding, fractional factorials, nesting, split plots, repeated measures, mixed models, response surface optimization. *Prerequisites:* 211; 221 recommended.

233 Survey Sampling (Same as Biostatistics 233.) De-

sign and data analysis for sample surveys. Simple random, stratified, systematic, cluster, multistage sampling. Practical issues in planning and conducting surveys. *Prerequisites:* 211; or 141 or 143 with instructor's permission.

235 Categorical Data Analysis (Same as Biostatistics 235.) Measures of association and inference for categorical and ordinal data in multiway contingency tables. Log linear and logistic regression models. *Prerequisite:* 211.

237 Nonparametric Statistical Method (Same as Biostatistics 237.) Nonparametric and distribution free methods; categorical, ordinal, and quantitative data; confidence intervals; rank and chi-square hypothesis tests; computer-intensive procedures (bootstrap, exact tests). *Prerequisites:* 211; or 141 or 143 with instructor's permission.

241 Statistical Inference (Same as Biostatistics 241.) Introduction to statistical theory: related probability fundamentals, derivation of statistical principles, and methodology for parameter estimation and hypothesis testing. *Prerequisites:* 151 or 153 or 251; 141 or equivalent; Math. 121.

251 Probability Theory (Same as Math. 207.) Distributions of random variables and functions of random variables. Expectations, stochastic independence, sampling and limiting distributions (central limit theorems). Concepts of random number generation. *Prerequisite:* Math 121; Stat 151 or 153 recommended.

252 Appl Discr Stochas Proc Models Markov chain models for biological, social, and behavioral systems models. Random walks, transition and steady-state probabilities, passage and recurrence times. *Prerequisite:* STAT 151 or STAT 153 or STAT 251

253 Appl Time Series & Forecasting (Same as Biostatistics 253.) Autoregressive moving average (Box-Jenkins) models, autocorrelation, partial correlation, differencing for nonstationarity, computer modeling. Forecasting, seasonal or cyclic variation, transfer function and intervention analysis, spectral analysis. *Prerequisite:* 211 or 225; or 141 or 143 with instructor's permission.

254 Appl Cont Stoch Process Models Queueing models for operations research and computer science systems analysis. Birth-and-death processes with applications. Exponential, Erlang and Poisson distributions. Monte Carlo simulation. *Pre/Co-requisites:* STAT 151 or STAT 153 or 251

256 Neural Computation (See Computer Science 256.)

261 Statistical Theory I (Same as Biostatistics 261, 262.) Point and interval estimation, hypothesis testing, and decision theory. Application of general statistical principles to areas such as nonparametric tests, sequential analysis, and linear models. *Prerequisites:* STAT 251 or either STAT 151 or STAT 153 with instructor permission.

262 Statistical Theory II (Same as Biostatistics 261, 262.) Point and interval estimation, hypothesis testing, and decision theory. Application of general statistical principles to areas such as nonparametric tests, sequential analysis, and linear models. *Prerequisites:* For 261: 151 with instructor permission or 251; for 262: 241 with instructor permission or 261.

265 Integrated Product Development (Same as Business Administration 293.)

270 Stochastic Processes in EE (See Electrical Engineering 270.) *Prerequisites:* EE 171 and STAT 151.

271 Filtering of Time Series (See Electrical Engineering 271.) *Prerequisite:* EE 270.

281 Statistics Practicum Intensive experience in carrying out a complete statistical analysis for a research project in substantive area with close consultation with a project investigator. *Prerequisites:* Any one of 200, 201, 221 through 237; or 253; some statistical software experience. No credit for graduate students in Statistics or Biostatistics.

293, 294 Undergrad Honors Thesis A program of reading, research, design, and analysis culminating in a written thesis and oral defense. Honors notation appears on transcript and Commencement Program. Contact Statistics

Program Director for procedures.

295 Special Topics For advanced students. Lectures, reports, and directed readings on advanced topics. *Prerequisite:* As listed in course schedule.

195 , 196 EMT - Basic

197, 198 EMT - Intermediate

002 Foundations of Social Work 2115mo ad in course sche6(G)/102 Tc030156 TAntedtroducndatcedes,

quisite: MSW standing or permission.

227 Found of Social Work Research An introduction to qualitative and quantitative methods of applied social research including program evaluation and the evaluation of practice and application to social work is taught. *Prerequisite:* MSW standing or permission.

228 Aging: A Strength & Hum Right Per An examination of aging for social work policy and practice from the perspectives of strengths, social justice, human rights and critical social constructionism.

analysis, sketching, model making, rendering, and paint elevations, all as forms of communication. *Prerequisites:* 030, 130. Alternating Falls w/THE 131.

250 Directing I Theory of theatrical directing, including script analysis; approaches to audition, rehearsal, and performance; coaching actors. *Prerequisites:* 010, 020, 030, 040, 050, 110, 150, either 120, 130, or 140. Senior standing & permission. Fall.

251 Directing II Development of skills and aesthetic values through the direction of a complete one act play. Not offered as performance opportunity. Enrolled students may not act in their own projects. *Prerequisites:* THE 250 and permission. Senior standing. Spring.

283 Seminar Credits: 3. Fall only.

284 Seminar Credits: 3. Spring only.

297 Senior Readings and Research Credits: 3. Fall only.

298 Senior Readings & Research Credits: 1-3. Spring only.

052 Introduction to Vermont Survey of Vermont's geography, history, politics, social issues, ethnic populations, culture, and environment. Special emphasis on an interdisciplinary approach to the study of Vermont.

055 Environmental Geology (See Geology 55.)

064 Native Americans of Vermont (See Anthropology 64.)

092 Vermont Field Studies (See Geography 92.)

095, 096 Introductory Special Topics See schedule of courses for specific titles.

123 The Vermont Political System (See Political Science 123.) *Prerequisite:* POLS 21.

160 The Literature of Vermont (See English 178.)

162 Geography of Place Names (See Geography 162.) *Prerequisite:* three hours in Geography.

184 Vermont History (See History 184.) *Prerequisite:* Three hours in history (11 or 12 recommended).

191 Internships *Prerequisites:* Nine hours of Vermont Studies, permission of Director of Vermont Studies, junior or senior standing.

192 Vermont Field Studies (See Geography 192.) *Prerequisite:* Three hours in geography.

195, 196 Intermediate Special Topics See schedule of courses for specific titles.

197, 198 Readings & Research *Prerequisite:* Declared minor in Vermont Studies.

230 The Vermont Economy (See Economics 230, Seminar C.) *Prerequisites:* EC 170, 171, 172.

284 Seminar in Vermont History Topical approach to Vermont history through original research utilizing primary sources available at UVM, the Vermont Historical Society, and the Vermont State Archives. *Prerequisites:* Junior or senior standing, 12 hours of history, including 184 or permission. (Same as HST 284).

295, 296 Advanced Special Topics See schedule of courses for specific titles. *Prerequisite:* Advanced undergraduate or graduate standing.

297, 298 Readings & Research *Prerequisite:* Declared minor in Vermont Studies.

074 Wildlife Conservation Historical and contemporary values of wildlife; impacts on habitats and populations; strategies for conservation, allocation, and use. Nonmajors only. *Prerequisite:* Basic understanding of biological terms and concepts.

130 Ornithology Taxonomy, classification, identification, morphology, physiology, behavior, and ecology of birds. *Prerequisites:* Biology 1, 2 or equivalent.

131 Field Ornithology Identification and field studies of birds, emphasizing resident species. Two weeks in summer. *Prerequisite:* 130; preference to WFB majors.

150 Wildl Habitat & Pop Measrmnt Field methods for measuring habitat variables and estimating population parameters. One week in summer. *Prerequisites:* 131, Forestry 21 or Botany 109, Natural Resources 140.

161 Fisheries Biology & Management Introduction to freshwater fish, habitats, and life histories. Overview of fishery management techniques and principles, including sampling and assessment methods, tocking, population and habitat manipulation, and regulations. *Prerequisites:* Biology 1, 2 or equivalent.

174 Prin of Wildlife Management Application of ecology and sociology to the management of wildlife populations and habitat; integration of wildlife management with demands for other resources; consideration of game species, endangered species, and biological diversity. *Prerequisites:* Natural Resources 103 or Biology 102 or Botany 160.

175 Wildlife and Society Investigates how people's attitudes, institutions, policies, and behaviors have affected wildlife across the North American landscape. Alternate years.

176 Florida Ecology Field Trip Major ecosystems and associated wildlife, ranging from north Florida flatwoods to south Florida Everglades. Field trip over spring recess. *Prerequisites:* 130, 174; permission. Alternate years.

177 Texas Wildlife Field Trip Major ecosystems and associated wildlife of south Texas, including Gulf coast, coastal prairies, lower Rio Grande Valley, and Chihuahuan desert. Field trip over spring recess. *Prerequisites:* 130, permission. Alternate years.

185, 186 Special Topics

187, 188 Undergrad Special Projects Individual projects supervised by a faculty member. Projects may involve independent field, laboratory, or library investigations. Formal report required. *Prerequisites:* Junior standing, submission of a project prospectus for permission.

191 Wildlife & Fisheries Practicum Supervised work experience in the wildlife and fisheries area. *Prerequisite:* Instructor's permission. Credit as arranged.

232 Ichthyology Biology of fishes. Focus is on form and function, morphology, physiology, behavior, life history, and ecology of modern fishes. *Prerequisites:* Biology 1, 2 or equivalent; junior standing. Alternate years. Undergraduate/graduate credit.

271 Wetlands Wildlife Breeding biology, behavior, habitat management, and population ecology of wetland wildlife with emphasis on waterfowl. *Prerequisites:* WFB 174, NR 103. Undergraduate/graduate credit.

272 Wetlands Wildlife Laboratory Laboratory and field assessment of the ecology and management of wetland habitats and their associated wildlife populations. *Prerequisites:* Previous or concurrent enrollment in WFB 271 or NR 260. Undergraduate/graduate credit.

273 Terrestrial Wildlife Integration of ecological principles, wildlife biology, land use, and human dimensions in wildlife. Emphasis on development and maintenance of terrestrial wildlife habitat, and population regulation of terrestrial species. *Prerequisite:* 174. Undergraduate/graduate credit.

274 Terrestrial Wildlife Lab Laboratory and field experience related to terrestrial species and management of their habitat. Field project required. *Prerequisite:* Previous or concurrent enrollment in 273. Undergraduate/graduate credit.

275 Wildlife Behavior Behavior and social organization of game and nongame species as they pertain to population management. *Prerequisites:* One year of biology, an ecology course, 74 or 174 recommended. Undergraduate/graduate credit.

279 Marine Ecology Structure and function of major marine communities, including open ocean, benthos, coral reefs, and estuaries. Emphasis on unique ecological insights

gained in the marine environment. *Prerequisites:* Biology 1 and 2, an ecology course, or instructor permission. Undergraduate/graduate credit.

285, 286, 287 Advanced Special Projects Advanced readings and discussions or special field and/or laboratory investigations dealing with a topic beyond the scope of existing formal courses. *Prerequisite:* Senior standing or permission. Credit arranged. (Not offered for graduate credit.)

288 Advanced Special Projects Advanced readings and discussions or special field and/or laboratory investigations dealing with a topic beyond the scope of existing formal courses. *Prerequisite:* Senior standing or permission. Credit arranged. (Not offered for graduate credit.)

299 Wildlife & Fisheries Honors Honors project dealing with wildlife or fisheries biology. *Prerequisite:* By application only; see program chair. UG only.

073 Intro to Women's Studies Survey of feminist theory and its application to specific areas of inquiry, including analysis of the intersections among race, class, and gender.

075 Intro Sexuality/Gender Identity Overview of the history, development, and contemporary literature on lesbian, gay, bisexual, transgender, questioning, queer, ally identities as explored through different academic and cultural lenses.

076 Women in Literature (See English 42.)

078 History of Costume (See Theatre 41.)

084 Mothers and Daughters Interdisciplinary exploration of historical, social, and cultural definitions of the mother/daughter experience informed by contemporary feminist perspectives.

095, 096 Introductory Special Topics See Schedule of Courses for specific titles.

101 Women and Society (See Sociology 122.) *Prerequisite:* 73 or three hours of sociology.

111 Wmns Spirit:Challenge Inst Rel Women's experience of the sacred and the self in Eastern and Western religious traditions. Analysis of political and cultural structures alienating women from their experience.

115 Studies in Gender & Religion (See Religion 173.) *Prerequisite:* Three hours in religion or instructor's permission.

121 Lit Genre:Wmn Writing Autobiog (See English 181.) *Prerequisite:* Three hours in English or Women's & Gender Studies.

122 19th Century Women's Writing (See English 147.) *Prerequisite:* Three hours in English or Women's & Gender Studies.

130 Sociology of Heterosexuality (See Sociology 130.) *Prerequisites:* Three hours of Sociology, preferably Sociology 1, or WGST 73 or 75.

131 Contemporary Feminist Art

141 Gender and Law Feminist jurisprudence and legal theory. Topics include economic consequences of reproduction, sexuality, divorce, custody; sexual harassment, employment discrimination; surrogate motherhood, domestic violence, rape, pornography, prostitution.

151 Feminism:Theories and Issues (See Philosophy 170.) *Prerequisite:* One course in philosophy or instructor's permission.

157 Greek Feminism (See Classics 157.)

161 History of Women in U.S. (See History 182.) *Prerequisite:* History 11 or 12, or three hours in Women's & Gender Studies.

165 Women, Society and Culture (See Anthropology 172.) *Prerequisite:* Anthropology 21 or instructor's permission.

170 Gender,Space & Environment (See Geography 178.) *Prerequisite:* Six hours in geography or Women's &

Gender Studies, or instructor's permission.

172 Women and Depression The exploration of the impact of gender socialization, sexual oppression, discrimination, self-esteem, and body image on women's mental health in our society.

174 Women, Science & Nature The position of women in relation both to science and nature is considered historically, culturally, and in terms of current feminist perspectives.

179 Ecofeminism (See Environmental Studies 179.) *Prerequisite:* 73 or Environmental Studies 1,2. Sophomore standing.

181 Women in American Politics (See Political Science 135.) *Prerequisite:* Political Science 21 or three hours in Women's & Gender Studies.

182 Women and Development (See Political Science 197.) *Prerequisite:* Political Science 71 or Women's & Gender Studies 73.

185 Economics of Gender (See Economics 156.) *Prerequisites:* EC 11,12 or instructor's permission.

191, 192 Internship Approved programs of learning outside the classroom. Students work at local women's agencies, in consultation with faculty sponsors. *Prerequisites:* A contract must be obtained from and returned to the Women's & Gender Studies Program office during registration; permission of Director of Women's & Gender Studies.

195, 196 Intermediate Special Topics See Schedule of Courses for specific titles.

201 Sociology of Reproduction (See Sociology 223.) *Prerequisite:* Six hours of sociology to include one of 29, 122, or 129; or instructor's permission.

205 Women Dev Third Wrld Countries (See Sociology 213.) *Prerequisite:* Six hours of sociology or instructor's permission.

271 Psychology of Women (See Psychology 231.) *Prerequisite:* One psychology course at the 100 level or instructor's permission.

273 Seminar in Feminist Theory An interdisciplinary examination of theories accounting for women's position in culture and society. Special emphasis on the relationship between gender, race, class, ethnicity, and sexuality. *Prerequisites:* 73, six additional hours in Women's & Gender Studies, and admission to the Women's & Gender Studies major or minor program.

295, 296 Advanced Special Topics See Schedule of Course for specific titles. UG only.

297, 298 Independent Study Selection and development of topic for investigation using assigned faculty member as preceptor. *Prerequisites:* 73, approval of Director of Women's & Gender Studies.

011 French Lit in Translation Selected topics in French literature. Readings and discussion of representative works in English translation. No knowledge of French required.

012 Francophone Lit in Translation Selected topics in the literature of the French-speaking world (excluding France). Readings and discussion of representative works in English translation. No knowledge of French required.

013 Italian Lit in Translation Selected topics in the literature of Italy. Readings and discussion of representational work in English translation. No knowledge of Italian is necessary.

014 Spanish Lit in Translation Selected topics in Spanish literature. Readings and discussion of representative works in English translation. No knowledge of Spanish required.

015 Span-Amer Lit in Translation Selected topics in Spanish-American literature. Readings and discussion of representative works in English translation. No knowledge of Spanish required.

016 Latino Writers US:Contemp Pers Study of texts written by Latinos since the 1960s. Topics: construction of

Administration

Fogel, Daniel Mark, Ph.D.
Bramley, A. John, Ph.D.
Bazluke, Francine T., J.D.
Carr, Frances E., Ph.D.
Gower, J. Michael
Gustafson, Thomas J., Ed.D.
William A. Neidt, Ph.D.

President
Senior Vice President & Provost
Vice President for Legal Affairs & General Counsel
Vice President for Research & Dean of Graduate Studies
Vice President for Finance and Administration
Vice President for Student & Campus Life
Vice President Development & Alumni

- **The Williams Professorship of Mathematics**, 1853, honors Azarias Williams of Concord, Vermont, merchant and judge, native of Sheffield, England, who in 1839 deeded to the University extensive land holdings.
- **The Marsh Professorship of Intellectual and Moral Philosophy** was established in 1867 to honor James Marsh, distinguished UVM president and philosopher of the 1830's. William E. Mann is the Marsh Professor.
- **The Pomeroy Professorship of Chemistry** was established in 1878 by John N. Pomeroy, A.B., 1809, who lectured on chemistry and served as trustee of the University. William E. Geiger is the Pomeroy Professor.
- **The Howard Professorship of Natural History and Zoology** was established in 1881 by John Purple Howard, a generous benefactor of the University. William Kilpatrick is the Howard Professor.
- **The Flint Professorship of Mathematics, Natural or Technic Science** was established in 1895 by a bequest from Edwin Flint.
- **The Converse Professorship in Commerce and Economics** was established in 1899 by John H. Converse, A.B., 1861, LL.D., 1897, who as a trustee of the University proposed the teaching of Latin, modern languages, history, and other subjects. William Gibson is the Converse Professor.
- **The Thayer Professorship of Anatomy** was established in 1910 to honor Dr. Samuel White Thayer, Dean of the College of Medicine from 1854-71 and 1880-82, from contributions made by alumni of the College of Medicine. Professor of Anatomy Rodney L. Parsons is the Thayer Professor.
- **The McCullough Professorship of Political Science** was established in 1926 through grants made by Gov. and Mrs. John G. McCullough. Frank Bryan, Professor of Political Science, is the McCullough Professor.
- **The Perkins Professorship of Zoology** was established in 1931 to honor George H. Perkins, a teacher of science and dean of the College of Arts and Sciences. Judith L. Van Houten, Professor of Biology, is the Perkins Professor.
- **The Shipman Professorship of Ophthalmology** was established in 1934 by a bequest from Dr. Elliot W. Shipman, M.D., 1885 and is held by Robert Millay, M.D..
- **The Lyman-Roberts Professorship of Classical Languages and Literature** was established in 1941 to honor Robert Roberts, mayor of Burlington in the 1890's and a University trustee from 1895-1939. Z. Philip Ambrose, Professor of Classics, is the Lyman-Roberts Professor.
- **The Corse Professorship of English Language and Literature** was established in 1952 by Frederick M. and Fannie C.P. Corse. Anthony G. Bradley, Professor of English, is the Frederick M. and Fannie C.P. Corse Professor.
- **The Lawrence Forensic Professorship of Speech** was established in 1965 by Edwin W. Lawrence, lawyer and financier

Index

Academic Advising, 24
Academic and General Information, 24
Academic Calendar, 2
Academic Discipline, 31
Academic Integrity, 31
Academic Options, 33
Academic Reprieve, 28
Academic Support Programs, 19
Accelerated Degree Programs, 26, 35
Acceptance Fee, 8, 14, 16
Accounting, 37, 105, 106
Accreditations, 6
Add/Drop/Withdrawal, 25
Address Correction, 32
Admissions, 7,9
Admissions Criteria, 7
Advanced Placement Program, 10
Advising Resources, 24
Affirmative Action/Equal Opp. Policies, 199
African Studies, 66
Agricultural Biochemistry, 112
Agriculture & Life Sciences, College of, 7, 42
ALANA U.S. Ethnic, 20, 66, 113
ALANA Studies, 56, 66
Academic Learning Integrated With Voluntary
Experience (Alive), 29
Anatomy and Neurobiology, 113
Animal Science, 45, 116
Anthropology, 59, 66, 113
Applications and Deadlines, 8; Fee, 14
Archaeology (see History, Anthropology, Classics,
European Studies)
Area and International Studies, 60, 66, 112
Art, 61, 67
Art Education, 74, 134
Art History, 61, 67, 115
Art Studio, 115
Articulation Agreements, 12
Arts and Sciences, College of, 7, 54
Asian Studies, 60, 66
Astronomy, 118
Athletic/Academic Conflicts, 31
Athletics and Recreational Sports, 22
Athletic Training, 101, 118
Attendance, 30
Auditing, (see Grades)

Biochemical Science, 48
Biochemistry, 47, 61, 119
Biocore, 118
Biological Sciences, 48, 62, 124
Biology, 61, 67, 119
Biomedical Technologies, 6, 12258 Tw(Asiancd4d01 Tc0.035555555555Tw(20mic Integrity, 31)Tj eonfh*0.0089 duc0.hletic LoA48, 66

0T*0.0178 T0.0108 Tw4(AddrDisabilg, 48, Mal Tecsee GradRegy, 4n, 7429)jT*0 TD20.0101 c0.0193 321(AddrEarlylechildhoodcation,

AddrEarT63T*0.Ft9edca&81 nsumT*0.01 I8s 164

A

Hour Tests, 26
Housing, 13, 23; charges, 14
 Residence Halls, 23
 Student Family Housing, 23
Human Development and Family Studies, 71, 82, 154

Independent Studies, 26, 58
Individually Designed Majors, 39, 59, 159
In-State Status Regulations, 11
Integrated Biological Science, 45
International Student Admissions, 10
Inter-Residence Association, 23; Fee, 14
Introduction, 3
Italian, 64, 68, 160

Japanese, 67, 160

Landscape Horticulture (see Sustainable Landscape Horticulture)
Lane Artists' Series, 5
Late Payment Service Charge, 16
Latin, 62, 160
Latin American Studies, 60, 67
Leadership and Policy, 137
Learning Cooperative (See Academic Support Programs), 24
Leave of Absence, 25
Liberal Arts and Sciences Curricula, 55
Libraries, 4
Library Science, 136
Linguistics, 161
Literacy, 137
Living/Learning Center, 35
Low Scholarship, 28

Massey University/UVM B.S./B.V.Sc., 9, 45
Mathematics, 64, 68, 92, 161
Medical Laboratory and Radiation Sciences, 97, 164, 165

he University of Vermont is an educationally purposeful



