

1998

# University of Maine Bulletin, 1998-1999 Undergraduate Catalog, Part 1

University of Maine

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University of Maine  
**BULLETIN**

1998 –1999  
**Undergraduate Catalog**

**Information in this catalog covers the year 1998–1999**

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University of Maine  
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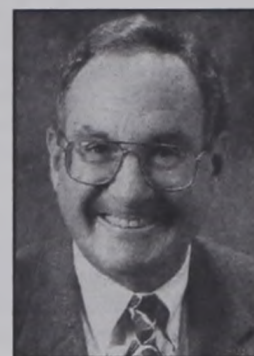
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## Message from the President

Welcome!

The University of Maine is known for good reason as the “state’s center for learning, discovery and service.” It awards more undergraduate and graduate degrees than any other institution in the state. Its research activities bring daily improvement to Maine’s quality of life and economy. And its public service activities extend the boundaries of the campus to the boundaries of the state.



If you have chosen to pursue an undergraduate degree at the University of Maine, you have chosen from the finest array of academic programs the state has to offer. Whether you are studying science, engineering, arts, humanities, social sciences, or professional studies, you can expect to be challenged to high achievement. You can expect small classes, opportunity for close interaction with outstanding professors, hands-on experimental learning, cutting edge technology and opportunities to work in teams. Your education will be as exciting and productive as you choose to make it.

The Undergraduate Catalog is a tool that can open up a world of learning opportunity. Used in conjunction with regular advising, it will lead you to the choices and options that make American higher education unique in the world. Take time to learn the contents of the catalog. Knowing the requirements for your degree and your major can save you time, lead you to the best courses for your academic needs, and help you focus your studies. Knowing the choices that exist can help you plan and select the best options. If you have questions about your course of study, talk to your advisor, your professors, and your department chair. They are here not only to teach the individual courses that make up your program, but to help you fit them into a complete pattern of learning.

Remember that your major is only one piece of your degree program. Your best bet is to surround it with courses in other departments that complement and reinforce the major. Take advantage of elective courses to fill out a complete program of study, and discover, like many who have come before you, the unexpected joy of studying a subject you never thought would interest you. Most people today can expect to change their career plans several times over the course of a lifetime, and everyone will spend more time exploring leisure, family time and civic responsibilities than they will in their workplace. So a complete, well-rounded course of study that helps prepare you for the unexpected turns of the future, and that leads to a lifetime of learning, is the best option.

I hope that you will enjoy your time at the University of Maine and find, like most of our alumni, that your years here are among the very best of your life. We at the University of Maine are glad you are here. We stand ready to serve you any way we can.

A handwritten signature in black ink that reads "Peter S. Hoff". The signature is stylized and cursive.

Peter S. Hoff  
President

### **Non-discrimination Policies**

The University of Maine is committed to a living, learning and working environment fully inclusive of the diverse populations it serves. Thus, the University shall not discriminate and shall comply with applicable laws prohibiting discrimination on the grounds of race, color, religion, sex, sexual orientation, national origin or citizenship status, age, handicap, or veteran status in employment, education, and all other areas of the University.

Consistent with this policy, the University has a responsibility to: (1) provide a living, learning and working environment free of harassment related to any of the above characteristics specifically including race, sex, and sexual orientation, (2) provide reasonable accommodation to assure the fullest possible participation of persons with disabilities in the educational and employment life of the University, (3) assure employment and educational practices free of discrimination, and (4) provide full and impartial investigation of concerns regarding discrimination in these categories in any area of the University.

### **Sexual Harassment Policy**

In accordance with its policy of complying with non-discrimination laws, the University will regard freedom from sexual harassment as a right which will be guaranteed as a matter of policy. Any employee or student will be subject to disciplinary action for violation of this policy.

Sexual advances, requests for sexual favors and other verbal or physical conduct of a sexual nature constitute sexual harassment when:

1. Submission to such conduct is made either explicitly or implicitly a term or condition of an individual's employment or education;
2. Submission to or rejection of such conduct by an individual is used as the basis for academic or employment decisions affecting that individual; or
3. Such conduct has the purpose or effect of interfering with an individual's academic or work performance or creating an intimidating, hostile or offensive employment, educational, or living environment.

Consenting relationships may constitute sexual harassment under this policy. When a professional power differential exists between members of the University of Maine and a romantic or sexual relationship develops, there is a potential for abuse of that power, even in relationships of apparent mutual consent. A faculty or staff member should not engage in such relationships. Further, the University prohibits the abuse of power in romantic or sexual relationships.

To ensure that power is not abused and to maintain an environment free of sexual harassment, a faculty or staff member must eliminate any current or potential conflict of interest by removing himself or herself from decisions affecting the other person in the relationship. Decisions affecting the other person include grading, evaluating, supervising, or otherwise influencing that person's education, employment, housing, or participation in athletics or any other University activity.

It is the policy of the University of Maine to ensure fair and impartial investigation that will protect the rights of the person(s) filing sexual harassment complaints, the person complained against and the University as a whole. A separate brochure and information specific to sexual harassment is available through the Office of Equal Opportunity.

Questions, concerns and complaints about discrimination in any area of the University or about the application of laws and regulations related to equal opportunity and affirmative action should be directed to: Office of Equal Opportunity, 5703 Alumni Hall, Room 318, University of Maine, Orono, Maine 04469-5703; (207) 581-1226.

### **Nonsexist Language**

The University of Maine, as an equal opportunity educational institution, is committed to both academic freedom and the fair treatment of all individuals. It therefore discourages the use of sexist language. Language that reinforces sexism can arise from imprecise word choices that may be interpreted as biased, discriminatory, or demeaning even if they are not intended to be. Accordingly, all University communications, whether delivered orally or in writing, shall be free of sexist language.

Each member of the University community is urged to be sensitive to the impact of language and to make a commitment to eliminate sexist language. Guidelines on the use of nonsexist language can be provided by the Women in the Curriculum Program or Public Affairs.

### **Office of Equal Opportunity**

The Office of Equal Opportunity serves UMaine students, faculty, staff, applicants and users of university services. The Office is responsible for: investigating complaints of discrimination and/or harassment based on race, color, religion, sex, sexual orientation, national origin or citizenship status, age, handicap, or veterans status; ensuring accessibility to all programs for persons with disabilities; monitoring and promoting compliance with EEO/AA laws and regulations; consultation and educational presentations on issues related to equal opportunity/affirmative action and/or discriminatory harassment; and advocacy and support for the creation and maintenance of an environment which promotes diversity.

The Director of the Office of Equal Opportunity is responsible to the students and employees of the University for resolving discrimination and discriminatory harassment complaints. The Director will talk with you informally or formally about your concerns. Contact the Office of Equal Opportunity, 5703 Alumni Hall, Room 318, University of Maine, Orono, Maine 04469-5703; (207) 581-1226.

### **Privacy Rights/Release of Information**

In compliance with the Family and Educational Rights and Privacy Act (FERPA) of 1974 (the Buckley Amendment), the University will not release academic information about a student without a signed request from the student. Certain information is considered public or directory information and includes: full name, dates of enrollment, enrollment status, and degrees earned is public. However, students may request through the Office of Student Records that even this normally public information be kept confidential. The full policy regarding all types of Student records at the University of Maine is available from the Office of Student Affairs.

## 1998-1999 ACADEMIC YEAR CALENDAR

### Fall Semester 1998

Classes begin  
Add/Drop week  
No Classes Labor Day  
Application for Degree filing deadline (Dec.)  
End of 1st 3rd of semester for withdrawals  
Fall break begins  
Classes resume  
End of 2nd 3rd of semester for withdrawals  
Registration for Spring 1999  
Thanksgiving break begins  
Classes resume  
Classes end  
Final exams begin  
Final exams end  
Commencement

*Note:* Family and Friends Weekend  
Homecoming Weekend

Monday, August 31, 8:00 a.m.  
Monday-Friday, Aug. 31-Sept. 4  
Monday, September 7  
Thursday, October 1, 4:30 p.m.  
Thursday, October 1, 4:30 p.m.  
Friday, October 9, 5:00 p.m.  
Wednesday, October 14, 8:00 a.m.  
Thursday, November 5, 4:30 p.m.  
Tuesday-Thursday, November 10-19  
Wednesday, November 25, 8:00 a.m.  
Monday, November 30, 8:00 a.m.  
Friday, December 11, 5:00 p.m.  
Monday, December 14, 8:00 a.m.  
Friday, December 18, 6:00 p.m.  
Saturday, December 19, 10:30 a.m.

Friday-Sunday, September 25-27  
Friday-Sunday, October 16-18

### Spring Semester 1999

Classes begin  
Add/Drop week  
Martin Luther King, Jr. Day (no classes)  
Application for Degree filing deadline (May)  
End of 1st 3rd of semester for withdrawals  
Spring recess begins  
Classes resume  
End of 2nd 3rd of semester for withdrawals  
Registration for Fall 1999  
Maine Day  
Classes end  
Final exams begin  
Final exams end  
Commencement

Monday, January 11, 8:00 a.m.  
Monday-Friday, January 11-15  
Monday, January 18  
Monday, February 1, 4:30 p.m.  
Wednesday, February 10, 4:30 p.m.  
Friday, February 26, 5:00 p.m.  
Monday, March 15, 8:00 a.m.  
Monday, March 29, 4:30 p.m.  
Tuesday-Thursday, March 30 - April 8  
Wednesday, April 28  
Friday, April 30, 5:00 p.m.  
Monday, May 3, 8:00 a.m.  
Friday, May 7, 12:30 p.m.  
Saturday, May 8, 10:30 a.m.

## 1999 SUMMER SESSION CALENDAR

### Three Week Schedules

May 10 - May 28, (May Term)  
June 7 - June 25  
June 14 - July 2  
June 22 - July 9  
June 29 - July 16  
July 13 - July 30  
July 20 - August 6

### Five Week Schedules

May 31 - July 2  
July 6 - August 6

### Six Week Schedules

May 31 - July 9  
July 12 - August 20

### Evening (Eight-Week) Schedules

May 10 - July 2 (May Term)  
May 31 - July 23  
June 14 - August 6

### Holidays (no classes)

Monday, May 24, 1999 - Memorial Day Observed  
Monday, July 5, 1999 - Independence Day Observed

## 1999-2000 ACADEMIC YEAR CALENDAR

### Fall Semester 1999

Classes begin	Tuesday, September 7, 8:00 a.m.
Add/Drop week	Tuesday-Monday, September 7-13
Application for Degree filing deadline (Dec.)	Friday, October 1, 4:30 p.m.
End of 1st 3rd of semester for withdrawals	Thursday, October 7, 4:30 p.m.
Fall break begins	Friday, October 8, 5:00 p.m.
Classes resume	Wednesday, October 13, 8:00 a.m.
End of 2nd 3rd of semester for withdrawals	Thursday, November 11, 4:30 p.m.
Registration for Spring 2000	Monday-Thursday, November 8-18
Thanksgiving break begins	Wednesday, November 24, 8:00 a.m.
Classes resume	Monday, November 29, 8:00 a.m.
Classes end	Friday, December 17, 5:00 p.m.
Commencement	Saturday, December 18, 10:30 a.m.
Final exams begin	Monday, December 20, 8:00 a.m.
Final exams end	Thursday, December 23, 6:00 p.m.
<i>Note: Family and Friends Weekend</i>	Friday-Sunday, September 24-26
<i>Homecoming Weekend</i>	Friday-Sunday, October 22-24

### Spring Semester 2000

Classes begin	Monday, January 24, 8:00 a.m.
Add/Drop week	Monday-Friday, January 24-28
Application for Degree filing deadline (May)	Tuesday, February 1, 4:30 p.m.
End of 1st 3rd of semester for withdrawals	Wednesday, February 23, 4:30 p.m.
Spring recess begins	Friday, March 10, 5:00 p.m.
Classes resume	Monday, March 27, 8:00 a.m.
End of 2nd 3rd of semester for withdrawals	Monday, April 10, 4:30 p.m.
Registration for Fall 2000	Tuesday-Friday, April 11-21
Maine Day	Wednesday, May 10
Classes end	Friday, May 12, 5:00 p.m.
Final exams begin	Monday, May 15, 8:00 a.m.
Final exams end	Friday, May 19, 12:30 p.m.
Commencement	Saturday, May 20, 10:30 a.m.

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## General Information

### Mission

The University of Maine is the principal research and graduate institution of the State of Maine. It offers a comprehensive program of undergraduate study that is enriched by the resources of its university setting. UMaine is one of seven institutions in the University of Maine System. The University of Maine has responsibility for those educational, research, and public service programs associated with its designation as Maine's land-grant university and sea-grant college. In the spirit of its land-grant heritage, the University is committed to the creation and dissemination of knowledge to improve the lives of its students and Maine citizens in their full social, economic, and cultural diversity.

The University of Maine offers a competitive and intellectually challenging experience for its students in degree programs for the baccalaureate level through the doctorate. Undergraduate education, with a foundation in the liberal arts and sciences that guides the intellectual and ethical development of the University's students, continues to be central to its teaching mission. Professional education in a wide range of disciplines, including programs unique within the State in engineering, the sciences, natural resources, teacher education, business, and human resources, meets student and societal needs. Graduate education, with special emphasis on programs that address the current and future needs of Maine citizens, and in selected areas in which the University of Maine can make significant national and international contributions, supports the research mission of the University, provides advanced training, and educates the next generation of teachers and researchers.

The University recognizes the increasingly global context of economic, social, scientific, technological, and political issues, as well as the evolving multicultural dimensions of contemporary society. Through teaching, basic and applied research, and public service activities, the University of Maine contributes to the economic, social and cultural life of Maine citizens. With programs that are national and international in scope, the University is also a major resource for Maine in the increasingly interdependent world community.

The University is committed to developing and sustaining a multicultural and pluralistic educational community that encourages the full participation of all of its members. An attractive campus and quality cultural, social, recreational, and athletic programs are offered to complement and extend the learning environment.

### History

The University was originally established as the State College of Agriculture and the Mechanic Arts under the provisions of the Morrill Act approved by President Abraham Lincoln in 1862. The next year, the State of Maine accepted the conditions of the act and in 1865 created a corporation to administer the affairs of the college. The original name was changed to the University of Maine in 1897.

The institution opened on September 21, 1868, with 12 students and two faculty members. Dr. Merritt Caldwell Fernald was appointed acting president. By 1871, curricula had been developed in agriculture, civil engineering, mechanical engineering, and electives. From these curricula the Colleges of Agriculture, Technology, and Arts and Sciences gradually developed. Women have been admitted since 1872. The School of Education was established in 1930 and became the College of Education in 1958. The University operated a college of law from 1898 to 1920.

Schools of Business Administration, Forestry, Home Economics, and Nursing were established in 1958. The School of Business Administration became the College of Business Administration in 1965. Schools of Engineering Technology and Performing Arts were established in 1975. The College of Forest Resources was

established in 1982. In 1989, the College of Arts and Sciences split to form three Colleges; the College of Social and Behavioral Sciences, the College of Arts and Humanities, and the College of Sciences. At the same time, some departments from the College of Engineering and Science and the College of Life Sciences and Agriculture merged with the College of Sciences, resulting in College name changes to the College of Engineering and the College of Applied Sciences and Agriculture.

In 1993, the College of Forest Resources merged with the College of Applied Sciences and Agriculture to form the College of Natural Resources, Forestry and Agriculture.

As a result of academic restructuring, approved by the Board of Trustees in July 1996, five new colleges were created, effective 7/1/97: College of Business, Public Policy and Health; College of Education and Human Development; College of Engineering; College of Liberal Arts and Sciences; and College of Natural Sciences, Forestry, and Agriculture.

The new structure of the Division of Academic Affairs will provide innovation and enhanced educational opportunities for students. The five new colleges have been designed to focus the University of Maine's strengths, create a shared commitment to the liberal arts foundation of our curriculum, highlight opportunities for Bachelor of Arts students, promote areas of excellence in graduate education and research, strengthen the mandate for research, and increase our institutional commitment for diversity and multicultural approaches. Each college has a core of undergraduate and graduate majors that characterizes the nature of the college and acknowledges its program strengths.

The Maine Agricultural Experiment Station was established as a division of the University by act of the Legislature of 1887, as a result of the passage by Congress of the Hatch Act. It succeeded the Maine Fertilizer Control and Agriculture Experiment Station, which had been established in 1885.

In 1980, the University of Maine was accorded Sea Grant College status by the Federal Government under provisions of the National Sea Grant College Program Act.

Graduate instruction has been offered by various departments for many years. The first master's degree was conferred in 1881, and the first doctor's degree in 1960. Since 1923, all graduate work has been consolidated within the Graduate School.

Beginning in 1895, the Summer Session has usually been held each year. Summer Sessions of varying lengths, as well as May Term, are designed for teachers, school administrators and for regular college students who desire to accelerate their work. In addition, effective January 1997, a Winter Session will be held annually.

### **Location**

The University of Maine is located in central Maine about halfway between Kittery, the southernmost town in the state, and Fort Kent on the northern boundary. It is on U.S. Route 2A approximately eight miles from Bangor, the third largest city in Maine and approximately a one hour drive to Bar Harbor and Acadia National Park. The University campus is a mile from the business section of Orono, an attractive town of about 10,000 people, and borders the Stillwater River, a branch of the Penobscot. Take I-95 North to exit 50 or 51 and follow signs to campus.

## Accreditation

The University of Maine is accredited by the New England Association of Schools and Colleges, Inc., which accredits schools and colleges in the six New England states. Accreditation by the Association indicates that the institution has been carefully evaluated and found to meet standards agreed upon by qualified educators.

In addition, many of the University of Maine's professional programs and departments are accredited by national professional associations, including:

Accreditation Board of Engineering and Technology, Inc.  
American Assembly of Collegiate Schools of Business  
American Chemical Society  
American Dietetic Association  
American Psychological Association  
American Speech-Language-Hearing Association  
Council on Social Work Education  
National Association of Schools of Music  
National Association of Schools of Public Affairs and Administration  
National Council for Accreditation of Teacher Education  
National League for Nursing  
Society of American Foresters  
Society of Wood Science and Technology

# University of Maine Academic Programs

College of Business, Public Policy and Health	B A	B S	C	M	G
<b>Business</b>		X		X	X
Accounting			X		
Finance			X		
Management			X		
Marketing			X		
<b>Nursing</b>		X			X
<b>Public Administration</b>					X
Criminal Justice Admin.			X		
Local Government Admin.			X		
<b>Public Management</b>	X			X	
<b>Public Relations</b>			X		
<b>Social Work</b>	X				X

College of Education and Human Development	B A	B S	C	M	G
<b>Child Development and Family Relations</b>		X		X	
Early Childhood Environments			X		
Individual Family Studies			X		
<b>Disability Studies</b>			X		
<b>Education</b>					X
<b>Elementary Education</b>		X		X	X
Art			X		
Canadian Studies			X		
Developmental Disabilities			X		
English			X		
French			X		
History and Social Science			X		
Honors			X		
International Affairs			X		
Mathematics			X		
Music			X		
Natural Science			X		
Peace Studies			X		
Performing Arts			X		
Philosophy			X		
Psychology			X		
Spanish			X		
Women's Studies			X		
<b>Kinesiology and Physical Education</b>		X			
Athletic Training			X		
Developmental Disabilities			X		
Health/Fitness			X		
Liberal Arts			X		
Management/Administration			X		
Science			X		
<b>Secondary Education</b>		X		X	X
English			X		
Mathematics			X		
Modern Languages			X		
Science			X		
Social Studies			X		

Division of Lifelong Learning	B A	B S	C	M	G
<b>Peace Studies</b>			X		
<b>University Studies</b>	◆				

Legend	
BA	Bachelor of Arts
BS	Bachelor of Science
C	Concentration
M	Minor
G	Graduate Program, for details refer to the Graduate Catalog.
•	Bachelor of Music
◆	Bachelor of University Studies

College of Engineering	B A	B S	C	M	G
<b>Chemical Engineering</b>		X			X
Process Engineering				X	
Pulp and Paper Technology		X		X	
<b>Civil Engineering</b>		X			X
Environmental Quality				X	
Structures				X	
Water Resources				X	
<b>Computer Engineering</b>		X			X
<b>Construction Management Technology</b>		X		X	
<b>Electrical Engineering</b>		X			X
Communications and Signal Processing			X		
Computer Hardware			X		
Digital Systems			X		X
Electronic Instrumentation			X		X
Microelectronics			X		
Power			X		X
Power and Industrial Control			X		
Sensors			X		
<b>Electrical Engineering Technology</b>		X			
<b>Engineering Physics</b>		X			X
<b>Mechanical Engineering</b>		X			X
Fluid Mechanics				X	
Solid Mechanics				X	
Thermodynamics				X	
<b>Mechanical Engineering Technology</b>		X			
<b>Naval Science</b>				X	
<b>Spatial Information Engineering</b>		X			X

College of Liberal Arts and Sciences	B A	B S	C	M	G
<b>Anthropology</b>	X			X	
<b>Art</b>	X				
Art Education			X		
Art History			X	X	
Studio Art			X	X	
<b>Astronomy</b>				X	
<b>Canadian Studies</b>				X	
<b>Chemistry</b>	X	X		X	X
Environmental Chemistry			X		
Health Professions			X		
<b>Classical Studies</b>				X	
<b>Communication</b>	X			X	X
<b>Communication Disorders</b>	X				X
<b>Computer Science</b>	X	X		X	X
<b>Dance</b>			X	X	
<b>Economics</b>	X			X	X
<b>English</b>	X				X
Creative Writing			X		
Expository Writing			X		
Professional Writing			X		
<b>Foreign Languages</b>				X	
<b>Franco-American Studies</b>				X	
<b>French</b>	X			X	X
<b>Geography</b>			X		
<b>German</b>	X			X	
<b>History</b>	X			X	X

## University of Maine Academic Programs

College of Liberal Arts and Sciences (continued)	B A	B S	C	M	G
International Affairs –				X	
In Anthropology	X				
In Economics	X				
In Foreign Languages	X				
French			X		
German			X		
Russian			X		
Spanish			X		
In History	X				
In Political Science	X				
Journalism	X				
Latin	X			X	
Latin American Studies				X	
Legal Studies			X		
Linguistics				X	
Marxist and Socialist Studies				X	
Mass Communication	X				
Mathematics	X			X	X
Medieval and Renaissance Studies				X	
Modern Languages	X				
Multimedia				X	
Music	X			X	X
Music Education	●				
Performance	●				
Philosophy	X			X	
Physics	X	X		X	X
Political Science	X				
Psychology	X			X	X
Religious Studies				X	
Rhetoric and Writing				X	
Romance Languages	X				
Russian				X	
Sociology	X			X	
Spanish	X			X	
Theatre	X			X	X
Acting			X		
Dance			X		
Design and Theatrical Production			X		
Directing			X		
Literature, History and Criticism			X		
Women's Studies	X			X	

College of Natural Sciences, Forestry and Agriculture (continued)	B A	B S	C	M	G
Bio-Resource Engineering Technology		X			
Aquaculture			X		X
Bio-Resource Technology			X		
Environmental Sciences			X		X
Food Processing			X		X
Forestry			X		X
Sustainable Agriculture			X		X
Botany	X	X			
Plant Biology (for non-majors)				X	X
Clinical Laboratory Sciences	X				
Cytotechnology			X		
Medical Technology			X		
Food Science and Human Nutrition		X			X
Food Management			X		
Food Science			X	X	
Human Nutrition			X	X	
Forest Ecosystem Science		X			
Forest Engineering		X			
Forestry		X			X
Geological Sciences	X	X		X	X
Environmental Geology			X		
Landscape Horticulture		X		X	
Business			X		
Design			X		
Horticulture			X		
Science			X		X
Marine Policy					X
Marine Resources				X	
Marine Science		X			X
Marine Biology			X		X
Physical Science			X		
Microbiology	X	X		X	X
Molecular and Cellular Biology		X		X	
Natural Resources		X		X	
Entomology			X		
Environmental Sciences			X		
Individualized Concentration			X		
Land Use Planning			X		
Marine Resources			X		
Natural History and Ecology			X		
Resource and Environmental Policy			X		
Soil and Water Conservation			X		
Waste Management			X		
Parks, Recreation and Tourism		X		X	
Interpretation			X		
Management			X		
Tourism			X		
Plant Science				X	X
Resource Mgmt. and Environ. Policy		X			
Agribusiness Admin.			X		
Agribusiness Management			X		
Agribusiness and Resource Econ.			X	X	
Environmental Mgmt. and Policy			X		
Soil Science				X	
Sustainable Agriculture		X		X	
Wildlife Ecology		X			X
Animal Science				X	
Communication				X	
Conservation Biology				X	
Fisheries				X	
Forestry				X	
Mathematics and Computers				X	
Remote Sensing and Spatial Analysis				X	
Resource Management				X	
Science				X	
Wood Science and Technology		X			
Forest Products				X	
Zoology	X	X		X	X

College of Natural Sciences, Forestry and Agriculture	B A	B S	C	M	G
Animal and Veterinary Sciences		X		X	X
Pre-Veterinary			X		
Aquaculture		X			
Aquaculture Science			X		
Aquaculture Technology			X		
Biochemistry	X	X		X	X
Biology	X	X		X	X
Pre-medical, pre-dental			X		
Bio-Resource Engineering		X			X
Aquacultural Engineering			X		
Bio-resource Engineering			X		
Biomedical Engineering			X		
Fluid Power			X		
Food Engineering			X		
Forest Engineering			X		
Land and Water Resource Engineering			X		

## Environmental Programs at the University of Maine

As Maine's Land Grant and Sea Grant University, the University of Maine is committed to teaching, research, and service to understand, maintain and improve the quality of the environment. There are a number of undergraduate degree programs that offer students an opportunity to pursue studies leading to careers in the environmental sciences.

Program	Contact Person	College	Page
Biology Botany	Christopher Campbell, Coordinator	Natural Sciences, Forestry and Agriculture	148 159
Bio-Resource Engineering	Thomas Christensen, Coordinator	Natural Sciences, Forestry and Agriculture	151
Civil and Environmental Engineering	Willem Brutsaert, Chair	Engineering	176
Environmental Chemistry	Barbara Cole, Acting Chair	Liberal Arts and Sciences	170
Forest Ecosystem Science	William Livingston, Chair	Natural Sciences, Forestry and Agriculture	212
Forestry	David Field, Chair	Natural Sciences, Forestry and Agriculture	217
Geological Sciences	Stephen Norton, Chair	Natural Sciences, Forestry and Agriculture	221
Natural Resources This is a broad-based interdisciplinary program encompassing many environmental studies concentrations	Mark W. Anderson,	Natural Sciences, Forestry and Agriculture	264
Resource Management and Environmental Policy	Stephen Reiling, Chair	Natural Sciences, Forestry and Agriculture	288
Sustainable Agriculture	Mary Wiedenhoeft, Coordinator	Natural Sciences, Forestry and Agriculture	309
Wildlife Ecology	James Gilbert, Chair	Natural Sciences, Forestry and Agriculture	314
Zoology	Malcolm Shick, Chair	Natural Sciences, Forestry and Agriculture	319

## General Education Requirements

Since September 1995, all students initiating a baccalaureate program at the University of Maine have been required to meet certain general education requirements. These requirements apply to all students, including transfer students, who enter the University in Fall 1998. Additional general requirements may be imposed by individual colleges, and each academic major imposes requirements specific to that area.

### Science

Students are required to complete two courses in the physical or biological sciences. This may be accomplished in two ways:

1. By completing two courses with laboratories in the basic or applied sciences;
2. By completing one laboratory course in the basic or applied sciences, and a second approved course that incorporates a laboratory experience and stresses the applications of scientific knowledge.

### Human Values and Social Context

Students are required to complete 18 credits in this broad area, selected from lists of approved courses to satisfy each of the five sub-categories listed. (Courses that satisfy requirements in more than one sub-category may be counted in each appropriate sub-category.)

1. Western cultural tradition
2. Social context and institutions
3. Cultural diversity and international perspectives
4. Population and the environment
5. Artistic and creative expression

### Mathematics

Students are required to complete at least six credit hours in mathematics, including statistics and computer science. No more than three of the six credit hours may be in computer science.

### Demonstrated Writing Competency

Students are required to write throughout their academic careers and must demonstrate competency both at the introductory level and within their majors. To fulfill this requirement, students must:

1. Complete ENG 101, College Composition, with a grade of C or better, or be excused from this course on the basis of a placement exam.
2. Complete at least two writing-intensive courses, at least one of which must be within the academic major.

### Ethics

Students are required to take a course or a series of courses placing substantial emphasis on discussion of ethical issues.

## Senior Capstone Experience

Students are required to complete an approved capstone experience within the major. The approved experience must be one in which the student draws upon and integrates the formal components of his or her undergraduate experience to perform at a professional level. Normally, the Capstone would conclude at the end of the student's senior year. Students should consult closely with their academic advisor to explore the range of options available for meeting this requirement.

For complete listing of courses satisfying General Education Requirements, see the listing accessible on the World Wide Web:

1. Connect to the UMaine Homepage: <http://www.umaine.edu>
2. Click on "Academic Information"
3. Click on *Academic Guidelines (Office of Student Records)*
4. Click on *General Education Requirements*
5. Click on *Table of Courses; under General Education Requirement* category of interest



## HOW TO USE THIS CATALOG TO DETERMINE PROGRAM REQUIREMENTS

1. Check university-wide requirements (see “General Information” and “Academic Information” sections).
2. Check college requirements.
3. Check department requirements.
4. Check program requirements.
  - Minor requirements are listed with colleges
  - Concentration requirements are listed with programs

# Notes

## College of Business, Public Policy and Health

211 Donald P. Corbett Business Building

<http://www.umaine.edu/Colleges/collbpph2.htm>

The College of Business, Public Policy and Health is the administrative umbrella for four nationally recognized programs in business, nursing, public management and social work. Each of these professional programs provides students with an education based on strong liberal arts foundation. This broad education is designed to prepare students for successful careers in a rapidly changing global environment while providing them with the skills needed for lifelong learning.

Virginia R. Gibson, *Interim Dean*  
(207) 581-1968  
gibson@maine.edu

Sheila Pechinski, *Associate Dean*  
(207) 581-1997  
spechin@maine.edu

Vicky King, *contact person*  
(207) 581-1968  
vickyk@maine.edu

### Schools and Departments:

Maine Business School

School of Nursing

Department of Public Administration

School of Social Work

Virginia R. Gibson, *Interim Dean* (207) 581-1968

Therese Shipps, *Director* (207) 581-2599

G. Thomas Taylor, *Chair* (207) 581-1887

Gail Werrbach, *Director* (207) 581-2386

### Academic Programs:

Bachelor of Arts in:

Public Management

Social Work

Minors:

Business Administration

Public Management

Bachelor of Science in:

Business Administration

Nursing

### College of Business, Public Policy and Health Graduation Requirements:

In order to graduate from the College of Business, Public Policy and Health students must be in good academic standing and the following requirements must be satisfied:

*Business Administration* requires a minimum 2.0 accumulative grade point average in the major.

*The School of Nursing* requires 126 hours with a minimum 2.0 accumulative grade point average in the major.

*The Department of Public Administration* requires a 2.5 average in all PAA courses.

*The School of Social Work* requires a 2.5 overall grade point average.

### College of Business, Public Policy and Health Notes:

**Entrance Requirements:** Entrance requirements for the degree programs in the College of Business, Public Policy and Health are noted in the Admission section of this catalog. Please note that admission requirements differ for the business, nursing, public management and social work majors.

**Academic Advising:** Faculty in the College of Business, Public Policy and Health are committed to ensuring that students receive thoughtful guidance throughout their academic careers. Each student will be assigned a faculty advisor in his/her intended major. Students may request a change in advisor at any time.

**Declaring the Major:** Students applying for admission to the College of Business, Public Policy and Health must designate a major on the application form. The four majors within the College

are: Business Administration, Nursing, Public Management and Social Work. Please read the appropriate section in this catalog for more information about the specific majors.

**Changing Colleges:** Students currently enrolled in another baccalaureate program at the University of Maine may change their enrollment to the College of Business, Public Policy and Health provided they have the required grade point average and are in good academic standing on the effective date of transfer. For students changing colleges, the Business School and the Department of Public Administration require a 2.0 accumulative grade point average, the School of Social Work requires a 2.5 accumulative grade point average, and the School of Nursing requires a 2.6 accumulative grade point average. Students who wish to change Colleges should see their College Dean and must declare an intended major at the time of the change.

**Transfers:** Students from other Universities generally are accepted as transfer students if they have completed a minimum of 12 semester credit hours with the required grade point average. For students transferring to the Business School and the Department of Public Administration, the required grade point average is 2.0. For students transferring to the School of Social Work and the School of Nursing, the required grade point average is 2.5. Students applying for transfer will receive an evaluation of their transcripts indicating course equivalencies for any courses taken at other institutions.

**Honors Program:** Qualified students in the College of Business, Public Policy and Health are encouraged to participate in the University Honors Program. For academic and admission requirements to the Honors Program consult the index or contact the Director of the Honors Program. Further information concerning the relationship between the College and the Honors Program can be obtained from the college honors secretary.

### **Minors:**

Students interested in completing a minor must declare their intention in advance by filing a "Declaration of Minor" form with the Dean or Department Chair.

<b>Business Administration</b> (21 credits):	3	ECO 120 Principles of Microeconomics
	3	ECO 121 Principles of Macroeconomics
	3	BUA 201 Principles of Accounting I
	3	BUA 220 The Legal Environment of Business
	3	BUA 325 Principles of Management and Organization
	3	BUA 350 Business Finance
	3	BUA 370 Marketing

<b>Public Management</b> (18 credits)	3	PAA 200 Public Management
	3	PAA 220 Introduction to Public Policy
	3	PAA 340 Public Budgeting
	3	PAA 350 Public Workforce Development
	6	Plus 2 additional PAA electives approved by the minor advisor

## College of Education and Human Development

151 Shibles Hall

<http://www.ume.maine.edu/~cofed/>

The College of Education and Human Development prepares highly qualified teachers, leaders, and specialists in the fields of kinesiology and physical education, and human development and family relations to advance educational improvement and societal change. The College is committed to quality instruction, responsive and innovative research, and to providing statewide opportunities for continued professional development to ensure its graduates are effective, adaptable and nationally competitive. Through its faculty, technology, research and service centers, the College supports Maine's educational system and reform initiatives and works in partnership with schools and public agencies at the state, regional and national levels. The College provides a dynamic network of expertise and information to help practitioners and policy makers anticipate, plan, meet challenges and create opportunities for children, families and communities in a constantly changing society.

Robert A. Cobb, *Dean*  
(207) 581-2441  
racobb@maine.edu

Walter J. Harris, *Associate Dean for Instruction*  
(207) 581-2467  
walter.harris@umit.maine.edu

Ethel Hill, *contact person*  
(207) 581-2441  
ethel.hill@umit.maine.edu

**Faculty:** (Note: The College of Education and Human Development does not have schools or departments.)

Professor Rosemary Bamford	(207) 581-2495	rosemary.bamford@umit.maine.edu
Professor Stephen Butterfield	(207) 581-2469	steve.butterfield@umit.maine.edu
Professor William Davis	(207) 581-2468	william.davis@umit.maine.edu
Professor Gordon Donaldson	(207) 581-2450	gordon.donaldson@umit.maine.edu
Professor Janice Kristo	(207) 581-2454	jan.kristo@umit.maine.edu
Professor Walter G. McIntire	(207) 581-2493	walter.mcintire@umit.maine.edu
Professor Robert Milardo	(207) 581-3128	robert.milardo@umit.maine.edu
Professor Constance Perry	(207) 581-2494	connie.perry@umit.maine.edu
Professor Gerald Work	(207) 581-2485	
Associate Professor Walter Abbott	(207) 581-2461	walter.abbott@umit.maine.edu
Associate Professor Marc Baranowski	(207) 581-3122	marc.baranowski@umit.maine.edu
Associate Professor Edward Brazee	(207) 581-2484	ed.brazee@umit.maine.edu
Associate Professor Phyllis Brazee	(207) 581-2457	phyllis.brazee@umit.maine.edu
Associate Professor Dorothy Breen	(207) 581-2479	dorothy.breen@umit.maine.edu
Associate Professor David Brown	(207) 581-2453	david.brown@umit.maine.edu
Associate Professor Sandra Caron	(207) 581-3138	dandy.caron@umit.maine.edu
Associate Professor Theodore Coladarci	(207) 581-2474	ted.coladarci@umit.maine.edu
Associate Professor Suzanne Estler	(207) 581-2416	suzanne.estler@umit.maine.edu
Associate Professor Robert Lehnhard	(207) 581-2480	robert.lehnhard@umit.maine.edu
Associate Professor John Maddaus	(207) 581-2429	john.maddaus@umit.maine.edu
Associate Professor Anne Pooler	(207) 581-2448	anne.pooler@umit.maine.edu
Associate Professor Brenda Power	(207) 581-2486	brenda.pwer@umit.maine.edu
Associate Professor Russell Quaglia	(207) 581-2492	russ.quaglia@umaine.edu
Associate Professor Glen Reif	(207) 581-2463	glen.reif@umit.maine.edu
Associate Professor James Rog	(207) 581-2449	jim.rog@umit.maine.edu
Associate Professor Gary Schilmoeller	(207) 581-3119	gary.schilmoeller@umit.maine.edu
Associate Professor Peggy Schomaker	(207) 581-3133	peggy.schomaker@umit.maine.edu
Associate Professor Pamela Schutz	(207) 581-2470	pam.schutz@umit.maine.edu
Associate Professor Sydney Carroll Thomas	(207) 581-2490	sydney.thomas@umit.maine.edu
Associate Professor Herman Weller	(207) 581-2436	herman.weller@umit.maine.edu
Assistant Professor James Artesani	(207) 581-4061	james.artesani@umit.maine.edu
Assistant Professor Randal Harrington	(207) 581-1237	rand.harrington@umit.maine.edu
Assistant Professor Edward Jadallah	(207) 581-2488	ed.jadallah@umit.maine.edu
Assistant Professor Dennis King	(207) 581-2439	dennis.king@umit.maine.edu

Assistant Professor Moirs	(207) 581-2487	kate.moirs@umit.maine.edu
Assistant Professor Eric Pandiscio	(207) 581-2452	eric.pandiscio@umit.maine.edu
Assistant Professor Anne Marie Read	(207) 581-2407	ann.read@umit.maine.edu
Assistant Professor Janet Spector	(207) 581-2459	janet.spector@umit.maine.edu
Assistant Professor Jeffrey Wilhelm	(207) 581-2746	jeff.wilhelm@umit.maine.edu
Instructor Mary Bird	(207) 581-2434	mary.bird@umit.maine.edu
Lecturer Eileen Fox	(207) 581-4066	eileen.fox@umit.maine.edu

### Academic Programs:

#### Bachelor of Science in:

Child Development and Family Relations  
Elementary Education

With concentrations available in:

Art  
Canadian Studies  
Developmental Disabilities  
English  
French  
Honors  
Human Development  
International Affairs  
Mathematics  
Music  
Natural Sciences  
Peace Studies  
Philosophy  
Psychology  
Social Studies  
Spanish  
Women's Studies

Kinesiology and Physical Education

With concentrations available in:

Athletic Training  
Developmental Disabilities  
Health Education  
Liberal Arts  
Management/Administration  
Science

Secondary Education

With concentrations available in:

English  
Foreign Languages  
Mathematics  
Science  
Social Studies

#### Minors:

Child Development and Family Relations  
Elementary Education  
Secondary Education

### College of Education and Human Development Notes:

#### Faculty:

Over 95% of the faculty have attained the doctoral degree representing a high level of expertise and professional contributions to the field of education. Our faculty are fully committed to high quality teacher preparation and actively involved with students and teachers in our partnership schools.

#### Graduate Programs:

The College offers a full range of graduate programs leading to the master's degree, the Certificate of Advanced Study (CAS) and the doctoral degree.

*About the College:*

The College of Education and Human Development combines extensive theory and practice to prepare teachers and other educational leaders and providers to help schools and society apply research-based knowledge and field-tested experience to address the changing issues, needs and interests of children, families and schools. The college offers four-year Bachelor of Science degrees in elementary, secondary and kinesiology and physical education; and child development and family relations. It also offers minors in education and in child development and family studies for UMaine students majoring in other disciplines.

The college emphasizes a diverse liberal arts background, academic specialization, professional training and field experiences to prepare teachers who are outstanding practitioners and enthusiastic role models for lifelong learning. Students admitted to the college's Professional Development School Program at the end of their sophomore year have proven their commitment to the profession through self-initiated field experiences and academic performance. They spend the majority of their junior and senior years working and learning in cooperating public schools, under the shared guidance and expertise of master teachers and college professors. Students document their learning and professional growth through the development of a portfolio which serves as a valuable self-marketing asset.

The college's teacher preparation programs are accredited by the National Council for Accreditation of Teacher Education. After successfully completing graduation requirements and the National Teacher Examination, graduates are recommended for provisional teaching certificates in the state of Maine. National accreditation helps pave the way for reciprocal certification in other states.

The college's Kinesiology and Physical Education program provides training and professional experiences for teachers and for health/fitness specialists that serve as a springboard for a variety of careers. Students use the latest technology to measure and analyze human movement, development and deviation, and work with children with special needs to help develop appropriate and responsive programs. The kinesiology and physical education division also conducts the award-winning National Youth Sports Program, providing students the opportunity to gain valuable organizational and educational skills, while helping economically disadvantaged children.

Students in Human Development and Family Studies explore the growth and development of individuals in the contexts of families, schools, and communities. Study may focus on individuals at various times in the lifespan (e.g., early childhood, adolescence, and adulthood) with special attention to the family context. The family is studied in its various forms (e.g., single-parent, two-parent families, and foster families). Graduates are employed as professional in family planning agencies, employment assistance programs, gerontology programs, parent education programs, intervention programs designed to assist individuals and families, daycare, nursery schools, elementary schools, child development service agencies, recreation programs and family respite care. Graduates are also pursuing advanced degrees in a variety of disciplines that focus on issues pertaining to children and families.

*The Student Body:*

The college has an enrollment of approximately 1,000 students who want to be tomorrow's teachers, educational leaders, child development and family relations professionals, or who plan to pursue other rewarding and challenging careers. Even some first-year students already are planning to pursue graduate degrees. Many students choose to study education and human development because of the influence of an inspiring teacher, but they all want to make a positive difference in the lives of children, families, schools and communities. In high school, these students were

well-rounded scholars, student-athletes and leaders, achieving academically, and contributing time and talent to a variety of organizations, activities and causes. Within the College of Education and Human Development's broad offerings and experiences, students find many new opportunities for personal and professional growth, such as Kappa Delta Pi, the international honor organization for education majors, and the Peer Leadership Program, a group of community-spirited students, many of them athletes, who work with area youngsters to help develop positive attitudes and a team approach to problem solving. Students have the opportunity to work closely with faculty on special projects and research, learn highly specialized skills, and meet leaders in their field at various activities on and off campus.

While the majority of students are from the Northeast, others represent states across the country, as well as several other nations. The College of Education and Human Development encourages international study and provides student teaching opportunities in countries such as England, Canada and Australia.

**Admissions Information:** Qualified students are admitted to the College of Education and Human Development as first-year students in a four-year program. Students with advanced standing seeking admission must satisfy the College of Education and Human Development's basic entrance requirements and have at least a 2.5 cumulative grade point average in prior college courses. Formal entrance requirements for the College of Education and Human Development are the same as for the University of Maine. Students wishing to enter the college should obtain a copy of the major Fact Sheet for degree programs offered through the college. Students from other institutions who have completed a portion of their college work or who want to change their professional plans may apply for admission by transfer. Accepted students will be given advanced standing in the College of Education and Human Development if their previous work meets the requirements and standards of their new program.

**Part-time Student Admissions and Residency Requirements:** Students whose only work in the College of Education and Human Development has been or will be in the Summer Session or Continuing Education Division should apply for admission to UMaine as part-time degree candidates. Students seeking initial teacher certification must be enrolled in a degree program. At least 30 credit hours of UMaine courses must be completed to receive a degree. Students who expect their work to be in the Summer Session should apply before their first registration; students whose first work is to be by Continuing Education classes should apply during their first course. Admission has a number of advantages, including immediate assignment of a major advisor and eligibility for guidance and counseling services. Application should be made to the UMaine Admission Office. Before enrolling for a course, off-campus students should ascertain the amount of such coursework allowed toward fulfilling degree requirements. This information is available from the Associate Dean for Academic Services of the College of Education and Human Development.

**Graduation Requirements:** Recent state legislation and national accreditation requirements may result in program changes. Students are responsible for monitoring current General Education requirements and should check with their advisors about potential or real changes.

**Professional Subjects:** The professional subjects required for a degree from the College of Education and Human Development teacher preparation program meet and exceed the current state requirements for a teaching certificate. Additionally, the state has mandated that individuals take the National Teacher Education exam before being certified.

The required professional subjects are designed to acquaint the student with the general aims of education and the techniques and principles of teaching. These



courses and related field experiences are arranged to culminate in a supervised student teaching experience.

*Summer Session and Continuing Education Courses:*

Many education courses are offered during the Summer Session and through the Continuing Education Division. Information about these course offerings is available from the CED Director's Office, 5713 Chadbourne Hall, UMaine, and Orono, ME 04469-5713.

*Double Degrees:*

Students intending to become candidates for double degrees must declare their intent to the deans of both colleges no later than the beginning of their senior year. Please see "Double Degrees" in the Academic Information section for complete information. All requirements of both colleges and majors must be fulfilled, including major requirements for work required outside the department.

*Honors Program:*

The College of Education and Human Development faculty encourage academically able and eligible students interested in interdisciplinary studies to participate in the UMaine Honors Program. Honors courses meet General Education and major requirements on an individualized basis determined upon consultation with the faculty advisor and the College's "Honors Program Secretary." Interested students may initiate candidacy by requesting written endorsement of their academic advisors

## Minors

### *Elementary or Secondary Education (25-34 credits)*

The College of Education and Human Development offers a minor in Education for all undergraduate students in other colleges of the University of Maine. The minor may be accomplished with or without student teaching, but student teaching is required to be recommended for teacher certification. A minor in Education requires from 25 to 34 credit hours of course work depending on the student's area of specialization. Students seeking state certification will need to meet the academic course requirements defined by the State of Maine. The minor includes the professional education courses required for certification. Student teaching is an additional 13 credit hours. Students must apply and be accepted to take upper level course work leading to the minor. The optimum time to apply for a minor is during the 2nd semester of the second year of study. Criteria for acceptance includes:

1. Course EDB 202 and a Child or Adolescent Development course, (CHF 201 or PSY 324).
2. Volunteer work in local schools, community service agencies, and summer camp programs of after school enrichment programs. One letter of recommendation should be from someone who has supervised the student's work with children/students.
3. Familiar with the student's skills, strengths and weaknesses, level of responsibility and motivation and able to provide an overall appraisal of the students performance as a student and potential to be a teacher.
4. Choosing teaching as a future profession.

Information about the minor in education can be obtained from the Information Desk in the college office.

### *Minor in Child Development/Family Relations (18 credits)*

The minor in Child Development/Family Relations consists of CHF 200, CHF 201, and 12 additional credits of CHF courses. Students must earn a minimum grade of C (2.0) in CHF 200 and CHF 201, and the overall GPA for the 18 CHF credits must average a C (2.0). No more than three credits of CHF 409 -Special Topics in Child Development/Family Relations and no more than three credits of CHF 496 - Field Experience in Child Development/Family Relations may be used toward the minor.

CHF 200 Family Interaction	3
CHF 201 Introduction to Child Development	3
Additional CHF courses	12

## College of Engineering

101 Barrows Hall

<http://www.engineering.umaine.edu>

FAX: (207) 581-2220

Engineering is practiced in a social context. Everything engineers produce affects the way individuals and societies function. To allow its graduates to work successfully in this setting, the University of Maine's engineering programs are designed to educate students in: the design and development of devices, processes and systems for the benefit of individuals and society; the understanding of social, ethical, safety and health related issues which pertain to the practice of engineering; and the dynamic nature of engineering developments and practice which require lifelong maintenance and updating of professional competence.

John Field, *Interim Dean*  
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johnf@eece.maine.edu

Chet A. Rock, *Associate Dean*  
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Chetrock@maine.maine.edu

Doreen Vaillancourt, *contact person*  
(207) 581-2216  
doreenv@eece.maine.edu

### Schools and Departments:

Department of Chemical Engineering	Douglas M. Ruthven, Chair	(207) 581-2283
Department of Civil and Environmental Engineering	Willem Brutsaert, Chair	(207) 581-2170
Department of Electrical and Computer Engineering	Mohammed Musavi, <i>Interim Chair</i>	(207) 581-2223
Department of Mechanical Engineering	Donald Grant, Chair	(207) 581-2120
Department of Military Science	LTC Marc Girard	(207) 581-1120
Department of Naval Science	Captain Philip Shullo	(207) 581-1551
Department of Spatial Information Science and Engineering	Mary Kate Beard, Chair	(207) 581-2188
School of Engineering Technology	John J. McDonough, <i>Director</i>	(207) 581-2341

### Academic Programs:

Bachelor of Science in:

- Chemical Engineering
- Civil Engineering
- Computer Engineering
- Construction Management Technology
- Electrical Engineering
- Electrical Engineering Technology
- Engineering Physics
- Mechanical Engineering
- Mechanical Engineering Technology
- Pulp and Paper Technology
- Spatial Information Engineering

Minors:

- Construction Management Technology
- Digital Systems
- Electronic Instrumentation
- Environmental Quality
- Fluid Mechanics
- Naval Science
- Power
- Process Engineering
- Pulp and Paper Technology
- Solid Mechanics
- Structures
- Thermodynamics
- Water Resources

### College of Engineering Graduation Requirements:

- 1) 36 credit hours of an appropriate combination of mathematics and basic sciences
- 2) 18 credit hours of approved humanities and social sciences
- 3) 36 credit hours of engineering topics
- 4) All additional departmental requirements listed under each program

### General Education Requirements:

In order to graduate with an accredited degree, engineering students are required to meet both the Accreditation Board for Engineering and Technology (ABET) requirements and the University of Maine General Education requirements. Most requirements of ABET and General Education are automatically met by following the

curriculum for each engineering major as outlined in the Undergraduate Catalog. The exceptions are a few courses that meet the general education "Human Values and Social Context requirement," but do not meet the ABET requirement as "Humanities and Social Sciences" electives. The unacceptable courses are listed below:

AED 171 The Teaching of Art	ESC 446 Marine Education for Elementary and Middle School Teachers
AES 105 Principles of Sustainable Agriculture	ESS 315 Teaching Social Studies in the Elementary School
ART 100 Drawing I	LCH 225 Landscape Graphics Communication
ART 110 2-D Design	SMS 100 Introduction to Ocean Science
ART 120 3-D Design	WLE 230 Introduction to Wildlife Conservation
BIO 213 Introduction to Marine Science	
COM 360 Nonverbal Communication	
EDB 202 The American School	
ESC 426 Methods of Teaching Environmental Education (K-12)	

In summary, all students entering the University of Maine are required to satisfy general education requirements and, *in addition*, engineering and technology students must meet all ABET requirements. The general education requirements are typically met as follows:

*Science:* Students are required to complete two laboratory courses in the physical or biological sciences. Any program in the college will easily exceed this standard with the required chemistry and physics courses.

*Human Values and Social Context:* Studies in the humanities and social sciences must be planned to reflect a rationale or fulfill an objective appropriate to the engineering profession and the University's educational objectives. To satisfy this requirement, the courses selected must meet the University General Education requirements in addition to providing some depth in a subject area and not be limited to a selection of unrelated introductory courses.

Courses such as philosophy, religion, history, literature, fine arts, sociology, psychology, political science, anthropology, economics, and languages other than English or a student's native language, technology and human affairs, history of technology, and professional ethics and social responsibility are acceptable to fulfill this requirement. Theory or history of the subject must accompany courses in the School of Performing Arts that involve performance; no more than three credits of performance may be used towards this requirement.

Subjects such as accounting, industrial management, finance, personnel administration, engineering economics, and military training do not fulfill the objective desired of the humanities and social science content.

Students are required to complete a total of 18 credits in the following five areas:

- Western Cultural Tradition
- Social Contexts and Institutions
- Cultural Diversity and International Perspectives
- Population and Environment
- Artistic and Creative Expression

The college maintains a complete list of all courses that have been approved as meeting a Specific sub-category definition *and* the ABET definition. The list can also be obtained in any departmental office. Note that courses listed under more than one sub-category count as fulfilling each sub-category; however, students must still complete at least 18 credits. The college recommends that engineering and technology students carefully select these electives so that an ethics elective is also included within the 18 credits (see *Ethics*, below).

*Mathematics:* Students are required to complete six credits in mathematics, which is easily accomplished by the required mathematics courses in any engineering or technology program.

**Writing Competency:** Students are required to write throughout their academic careers and must demonstrate competency by completing ENG 101 with a grade of C or better, or be excused from this course on the basis of the placement examination offered by the English Department (or by scoring a 3 or better on the AP English Examination). In addition, students must complete at least two writing intensive courses, one of which must be within the academic major. For most engineering and technology majors, ENG 317 is the writing intensive course outside the major (exceptions are chemical engineering, construction management technology and engineering physics). Writing intensive courses within the majors are CET 456, CHE 361 and 363, CIE 231 and 366, ECE 403, EET 100, MEE 341, MET 234, PHY 441 and 442, and SIE 451.

**Ethics:** Students are required to complete a course or series of courses placing substantial emphasis on discussion of ethics. As of December 31, 1997, only one engineering or technology course has been approved under this category (TSO 360). However, majors can select a Human Values and Social Context elective that also qualifies as an ethics elective. Engineering and technology majors should periodically check with their advisors as the college expects that more engineering courses will be added to this category.

**Senior Capstone Experience:** Students are required to complete a capstone experience within the major. For engineering and technology majors capstone courses are CET 458, CHE 479, CIE 411, ECE 403, EET 451 and 452 combined, MEE 387 and 388 combined, MET 462 and 463 combined, and SIE 460. As of December 31, 1997 the capstone experience for Engineering Physics (PHY 481 and 488 combined) had not been formally approved.

### College of Engineering Notes:

**Level of Instruction:** Courses numbered 100-499 are undergraduate courses with courses numbered 300-499 being upper-level undergraduate courses. Courses numbered 500-699 are graduate courses. Undergraduate students may take 500-599 courses only by special permission of their Department Chair. Permission will only be granted to honor students or those undergraduates whose advancement in the field will permit their taking a graduate level course among graduate students without disadvantage to themselves. Undergraduates cannot take 600-699 courses.

**Cooperative Work-Study Opportunities:** A number of cooperative work-study programs are available in the College of Engineering. Details of each program may be obtained from the appropriate department.

**Technology and Society Project:** The Technology and Society project is intended to develop ways to enhance the humanities and social sciences component of undergraduate engineering programs, to work with other colleges in developing the study of technology as a human activity and to infuse the undergraduate curriculum of the university with this study. The program offers courses dealing with technological development and with topics involving the interfaces of technology and society. Teams of faculty members in which each member can provide a different perspective on the subject matter usually teach these courses. Some courses fulfill part of the Humanities/Social Science requirements for Engineering students. Courses covering the Technology and Society area are:

HTY 419 Science and Society until 1800  
HTY 420 Science and Society Since 1800  
HTY 485 World Maritime History I

TSO 188 Energy and Society: Technological Choices  
TSO 198 Technology and Society I  
TSO 199 Technology and Society II

HTY 486 World Maritime History II  
HTY 491 Technology and Society Until 1800  
HTY 492 Technology and Society Since 1800  
INT 330 Waste Management

TSO 288 Issues in Environmental Pollution  
TSO 351 Transportation and Social Change  
TSO 360 Introduction to Engineering Ethics  
TSO 398 Special Topics in Technology and Society

*Honors Program:*

The University of Maine Honors Program is especially well-suited for engineering majors who are interested in interdisciplinary courses and interaction with students outside the field of engineering. Honors course work expands the educational experience in the humanities and social sciences and also allows engineering students the opportunity to work in greater depth within their own majors than is possible with a traditional schedule.

To graduate with Honors, students must complete a minimum of five HON courses, including HON 101 and 102 (which may be substituted for ENG 101). Additional offerings are available at the 200 and 300 levels. The Honors thesis is built around HON 498 and 499 taken in the senior year. Typically, engineering students build their thesis around research conducted within their major. The area of honors work will show on the student's transcript.

*Transfer Credit:*

In order that degree recipients meet the minimum education requirements expected for an engineering degree from the University of Maine; transfer students must earn a minimum of 30 hours of University of Maine courses to qualify for the BS degree. Among these 30 credits must be the appropriate "capstone" design course. Degree credit will normally be allowed for courses in which grades of "C-" or above have been received. Evaluation of such courses for degree credit and possible equivalency rests with the Dean of the College of Engineering. Credits from military service schools do not transfer. Normally credits transferred from associate degree programs may be used for elective credits only. Associate Degree level mathematics and science courses do not fulfill the requirements for the BS Engineering program.

CLEP credit will be granted only for the appropriate subject exams. No credit is given for the CLEP general examinations. The College of Engineering does not grant academic credit for prior work experience.

*Double Major:*

Double majors are permitted between most disciplines in the College of Engineering. The requirements for meeting the double major state that a student must meet all requirements of two separate and distinct disciplines. Students also may obtain double majors across colleges by satisfying the requirements for both colleges and majors. Students intending to become candidates for double majors across colleges must declare their intent to the deans of both colleges no later than the beginning of their senior year. Please see "Double Majors" in the Academic Information section for complete information.

*Away Status:*

Students wishing to register for "Away" status must be in good academic standing and must obtain prior approval from their academic advisor and dean. Course equivalencies should be determined prior to registration.

Before students of the College of Engineering pursue Summer Session courses in any institution (including UMaine), they must be in good academic standing and secure the approval of the dean and the chairperson of the student's major department if they expect degree credit for such work.

*Pass/Fail:*

Students enrolled in the College of Engineering may not take courses that are to be used to fulfill the degree requirements on a Pass/Fail basis.

**Pulp and Paper  
Foundation:**

Supported by private funding from nearly 150 companies located in 25 states as well as several hundred individual donations and endowment gifts, the foundation encourages a strong teaching and research program in Chemical Engineering, with a significant undergraduate merit based scholarship program available to qualified students throughout the College of Engineering, School of Engineering Technology and the forest management program in the College of Natural Sciences, Forestry and Agriculture.

**Minors:**

The College of Engineering offers minors in the departments of Chemical, Civil and Environmental, Construction Management Technology, Electrical and Computer, and Mechanical Engineering. In cooperation with the College of Natural Sciences, Forestry and Agriculture a minor is offered through the Department of Biosystems Engineering and Science. Prior to enrolling in a minor a student must consult with the appropriate Department Chairperson to select the courses most appropriate to his/her background and career goals. Minors are open to students who have completed; mathematics through differential equations; a year of physics and at least one course in Chemistry along with the prerequisites required for the individual Engineering courses. All students obtaining a Minor in Engineering are required to obtain a GPA of at least 2.0 in the minor with no more than one grade less than C-.

In addition the Department of Naval Science (NROTC) offers a minor in Naval Science.

**Construction Management Technology: (16 credits)**

- 3 MET 121 Technical Drawing
- 4 CET 130 Building Construction
- 3 BUA 325 Principles of Management and Administration
- 3 CET 451 Construction Law
- 3 CET 456 Construction Documents and Administration  
Or, CET 462 Construction Scheduling

**Digital Systems: (23 credits)**

- 4 ECE 172 Logic Systems
- 3 ECE 210 Electrical Networks I
- 4 ECE 211 Electrical Networks II
- 3 COS 220 Introduction to Computer Science I
- 3 ECE 471 Microprocessor Applications Engineering
- 3 ECE 475 Sequential Logic Systems
- 3 ECE 477 Hardware Applications using C

**Electronic Instrumentation** (23 credits, 14 credits of core courses and at least 9 credit hours for optional ECE courses).

**Core courses:**

- 3 ECE 210 Electrical Networks I
- 4 ECE 211 Electrical Networks II
- 3 ECE 262 Solid State Electronics Devices
- 4 ECE 342 Electronics I

**Examples of Optional Courses:**

- 4 ECE 343 Electronics II
- 3 ECE 351 Fields and Waves
- 3 ECE 434 Biomedical Engineering
- 3 ECE 465 Introduction to Sensors
- 4 ECE 466 Sensors Technology and Instrumentation
- 3 ECE 471 Microprocessor Application Engineering

**Environmental Quality:** (18 credits)

- 3 CIE 231 Fundamentals of Environmental Engineering
- 4 CIE 250/251 Hydraulics with lab
- 4 CIE 431 Pollutant Fate and Transport
- 4 CIE 432 Water and Wastewater Process Design
- 3 CIE 455 Hydrology
- Or, CIE 456 Groundwater Hydrology and Hydraulics

**Fluid Mechanics:** (18 credits)

- 3 MEE 150 Applied Mechanics: Statics
- 3 MEE 230 Thermodynamics I
- 3 MEE 270 Applied Mechanics: Dynamics
- 3 MEE 360 Fluid Mechanics
- 3 MEE 456 Introduction to Computational Methods
- 3 MEE 461 Compressible Fluid Flow I
- Or, MEE 462 Fluid Mechanics II

**Naval Science:** (23 credits)

## Core Courses

- 2 NAV 101 Introduction to Naval Science
- 3 NAV 102 Naval Ship Systems I (Engineering)
- 3 NAV 201 Naval Ship Systems II (Weapons)
- 3 NAV 304 Naval Leadership and Management II
- 3 BUA 325 Principles of Management/Organization
- 3 HTY 280 Naval History
- Or, NAV 202 Seapower and Maritime Affairs

## Plus the required option (6 credits)

- 6 NAV 301 Navigation and Naval Operations I
- And, NAV 302 Navigation and Naval Operations II

*or*

- 6 NAV 310 Evolution of Warfare
- And, NAV 410 Amphibious Warfare

**Power:** (23 credits, 14 credits of core courses and at least 9 credit hours of optional ECE courses).

## Core Courses:

- 3 ECE 210 Electrical Networks I
- 4 ECE 211 Electrical Networks II
- 4 ECE 323 Electric Power Systems I
- 3 ECE 427 Electric Power Systems II

## Examples of Optional Courses:

- 3 ECE 314 Linear Circuits and Systems
- 3 ECE 351 Fields and Waves
- 3 ECE 414 Feedback Control Systems
- 3 ECE 417 Introduction to Robotics
- 3 ECE 428 Electric Power Systems III
- 3 ECE 498 Selected Topics in Electrical and Computer Engineering - Power Electronics

**Process Engineering:** (23 credits)

- 4 CHE 200 Fundamentals of Chemical Engineering
- 3 CHE 385 Chemical Engineering Thermodynamics I

- Or, CHE 386 Chemical Engineering Thermodynamics II
- 4 CHE 360 Elements of Chemical Engineering I
- 4 CHE 362 Elements of Chemical Engineering II
- 3 CHE 352 Process Control
- 5 CHE Electives

***Pulp and Paper Technology: (17 credits)***

- 3 BMB 221 Organic
- 3 CHY 121 Introduction to Chemistry
- 1 CHY 123 Introduction to Chemistry Laboratory
- 3 PPA 264 Survey of the Paper Industry
- 3 PPA 466 Papermaking Technology
- 4 PPA 474 Paper Manufacture and Testing

***Solid Mechanics: (18 credits)***

- 3 MEE 150 Applied Mechanics: Statics
- 3 MEE 251 Strength of Materials
- 3 MEE 270 Applied Mechanics: Dynamics
- 3 MEE 453 Experimental Mechanics
- 3 MEE 455 Advanced Strength of Materials
- 3 MEE 456 Introduction to Computational Methods

***Structures: (16 credits)***

- 4 CIE 340 Introduction to Structural Analysis
- 4 CIE 440 Structural Analysis I
- 4 CIE 442 Reinforced Concrete Design
- 4 CIE 443 Structural Steel Design

***Thermodynamics: (18 credits)***

- 3 MEE 150 Applied Mechanics: Statics
- 3 MEE 230 Thermodynamics I
- 3 MEE 231 Thermodynamics II
- 3 MEE 360 Fluid Mechanics
- 6 plus any two of the following:
  - MEE 383 Turbomachine Design
  - MEE 384 Power Plant Design and Engineering
  - MEE 386 Refrigeration and Air Conditioning System Design
  - MEE 434 Thermodynamic Design of Engines

***Water Resources: (16 credits)***

- 3 CIE 231 Fundamentals of Environmental Engineering
- 4 CIE 250/251 Hydraulics with lab
- 3 CIE 450 Open Channel Hydraulics
- 3 CIE 455 Hydrology
- 3 CIE 456 Groundwater Hydrology and Hydraulics



# College of Liberal Arts and Sciences

100 Stevens Hall

<http://www.ume.maine.edu/~las/>

FAX: (207) 581-1953

The College of Liberal Arts and Sciences is dedicated to providing a sound education in the liberal arts and to imparting the specific knowledge and skills required for careers in one of its many representative disciplines. This education, both in its breadth and its approach to learning, leads students to an enlightened sense of themselves, their heritage, their world; prepares them for responsible and active citizenship; and prompts those habits of thought and expression crucial to a lifetime of active learning. A major goal of the college is to provide students with the ability to think independently, to analyze, and to achieve independent judgement.

Rebecca E. Eilers, *Dean*  
(207) 581-1954  
reilers@maine.edu

Welch D. Everman, *Associate Dean*  
(207) 581-3583  
everman@maine.edu

Charles R. Russ, *Associate Dean*  
(207) 581-3844  
cruss@maine.edu

## Schools and Departments:

Department of Anthropology	Chair	(207) 581-1897
Department of Art	Laurie Hicks, Chair	(207) 581-3245
Department of Chemistry	Barbara Cole, Acting Chair	(207) 581-1169
Department of Communication Disorders	D. Kimbrough Oller, Chair	(207) 581-2006
Department of Communication and Journalism	Eric Peterson, Chair	(207) 581-1283
Department of Computer Science	Thomas Byther, Chair	(207) 581-3941
Department of Economics	Ralph Townsend, Chair	(207) 581-1850
Department of English	Ulrich Wicks, Chair	(207) 581-3822
Department of History	William TeBrake, Chair	(207) 581-1908
Department of Mathematics and Statistics	William Bray, Chair	(207) 581-3901
Department of Modern Languages and Classics	Kristina Passman, Chair	(207) 581-2073
Department of Philosophy	Douglas Allen, Chair	(207) 581-3866
Department of Physics and Astronomy	Kenneth Brownstein, Chair	(207) 581-1039
Department of Political Science	Matthew Moen, Chair	(207) 581-1871
Department of Psychology	Joel Gold, Chair	(207) 581-2032
Department of Sociology	Sandra Gardner	(207) 581-2380

## Academic Programs:

### Bachelor of Arts in:

Anthropology  
Art  
Chemistry  
Communication  
Communication Disorders  
Computer Science  
Economics  
English  
French  
German  
History  
International Affairs in Anthropology  
International Affairs in Economics  
International Affairs in Foreign Languages  
International Affairs in History  
International Affairs in Political Science  
Journalism  
Latin

### Minors:

Anthropology  
Art History  
Astronomy  
Canadian Studies  
Chemistry  
Classical Studies  
Communication  
Computer Science  
Dance  
Economics  
Foreign Languages  
Franco-American Studies  
French  
German  
History  
International Affairs  
Latin  
Latin American Studies

Mass Communication  
 Mathematics  
 Modern Languages  
 Music  
 Philosophy  
 Physics  
 Political Science  
 Psychology  
 Romance Languages  
 Sociology  
 Spanish  
 Theatre  
 Women's Studies

Linguistics  
 Marxist and Socialist Studies  
 Mathematics  
 Medieval and Renaissance Studies  
 Multimedia  
 Music  
 Philosophy  
 Physics  
 Psychology  
 Religious Studies  
 Rhetoric and Writing  
 Russian  
 Sociology  
 Spanish  
 Studio Art  
 Theater  
 Women's Studies

**Bachelor of Music in:**  
 Music Education  
 Music Performance

**Bachelor of Science in:**  
 Chemistry  
 Computer Science  
 Physics

### College of Liberal Arts and Sciences Graduation Requirements:

#### *Bachelor of Arts*

In addition to the credit required for the General Education, requirements, students must take nine credits of courses numbered 200 or above with at least one course prerequisite ("upper level") in an *area or areas* outside of their major area. *Areas* defined as:

- Art/Humanities;
- Sciences (includes courses from the Colleges of Engineering and Natural Sciences, Forestry, and Agriculture);
- Social/Behavioral Sciences (includes courses from the Colleges of Education and Human Development and the College of Business, Public Policy, and Health);
- Interdisciplinary Studies, such as Women's Studies (WST courses), Franco-American Studies (FAS courses), Peace Studies (PAX courses), etc.

#### *Specific Credit Limits:*

1. KPE skills courses - 2 credits, maximum allowed
2. Outside major - 72 credits minimum
3. ROTC - 9 credits, maximum allowed, Junior/Senior level (numbered 300 or 400) only

In order to graduate from the College students must be in good academic standing, i.e., not on academic probation. Any student who was admitted on a "CONDITIONAL" status because they lacked a required high school unit must have this condition removed. In addition, the following must be satisfied:

1. A minimum accumulative grade point average of 2.0 ("C" average) in the major
2. Satisfactory completion of the College's BA or BS requirements

**Please Note:** Students who entered a degree program at UMaine prior to September 1997 may follow a different set of requirements. All questions regarding university or college requirements should be addressed to the College Dean.

## College of Liberal Arts and Sciences Notes:

- Entrance Requirements:** Requirements for admission to degree programs in the College of Liberal Arts and Sciences are noted in the Admission section of the catalog. Please note that admission requirements differ for BA and BS degree programs.
- Academic Advising:** The College of Liberal Arts and Sciences is committed to fostering and maintaining a positive relationship between students and faculty. To help achieve this goal, all new students will be assigned to a faculty academic advisor in the discipline in which they intend to major. Students who do not list an “intended major” on their admission application will be assigned to a faculty advisor in any one of the disciplines in the college; once they focus in on an intended major, advisor reassignment may be requested.
- Declaring the Academic Major:** New first-year students admitted into a Bachelor of Science program enter directly into the major. Students admitted into a Bachelor of Arts program must declare an academic major when they have accumulated 53 degree hours. At that time, the College will send to each student a “declaration of major” form along with appropriate instructions. Students should note that admission into the college does not guarantee acceptance into any particular major. For information on admission to a specific major, please read carefully the catalog copy for that major.
- Changing Colleges:** The College normally accepts all current UMaine students from other baccalaureate programs who have a 2.0 accumulative grade point average and are in good academic standing on the effective date of transfer. However, eligibility for any particular major is determined by the department in which the major resides (see paragraph above). Thus, a student may be admitted into the college, but not necessarily into their first choice major.
- In unusual circumstances, students who have less than a 2.0 accumulative grade point average may be allowed to change colleges. Students who find themselves in this situation should discuss their request for change with the college dean.
- Transfers:** Students from other universities or from baccalaureate programs at other campuses within the University of Maine System generally are accepted as transfers to the College of Liberal Arts and Sciences if they have earned an accumulative grade point average of 2.0 at their previous institution. However, this does not assure students of acceptance into any particular major. Please refer to the paragraph on “declaring the academic major,” for additional information.
- Foreign Language Requirements**
- Many departments that offer the BA degree have special language requirements or recommendations for BA degree students, as follows: NOTE: Intermediate level proficiency means the equivalent of two semesters of an intermediate level language course; e.g. SPA 203, 204.
- ART: Intermediate level French or German is required for students who major in Art History
  - ENGLISH: Proficiency at the intermediate level
  - HISTORY: Proficiency at the intermediate level
  - INTERNATIONAL AFFAIRS At least one year of a foreign language beyond the intermediate level
  - MUSIC: One year of a foreign language, which can be either the continuation of the language taken in high school or a new language
  - PHILOSOPHY: One year of a foreign language is recommended for the BA degree, two years for those going on to graduate study
  - THEATER: Intermediate level proficiency in a foreign language

Students in some majors who have presented two years of a high school foreign language for admission may not receive credit for an elementary course in that particular language, unless five years have passed between high school graduation and admission to a college or university. Please consult your major department or college regarding their specific language requirement policies. It is recommended that these students take:

1. An intermediate or advanced course in the language studied in high school (credits earned in those courses count towards the advanced course credits in the humanities category)
- OR
2. An elementary course in a new language (credits earned here count towards the introductory course credits in the humanities category)

Any language course (except for elementary courses in the student's high school foreign language) can be taken for credit as an elective. Credits are awarded on a semester basis. Finding the appropriate level at which to take a language course is essential for success.

Foreign Language credit examinations in French, German, and Spanish are offered four times a year to students who have taken a minimum of three years of a foreign language in High School.

Credit by examination can be achieved as follows:

1. If the score on the examination is sufficiently high (see following table), the student will receive three hours of degree credit equivalent to the first semester of the intermediate course.
2. As an incentive to continue language study, a student is eligible to receive an additional three credit hours equivalent to the second semester of the intermediate course by skipping an intermediate course and passing with a grade of "B" or better two semesters of language study beyond the intermediate level. For example: a student who scores 53 on the French examination would receive three credits equivalent to FRE 203. The student would then have the choice of taking FRE 204, or skipping FRE 204 and taking FRE 205 and FRE 209 or 210, or an advanced course. A student who completes two three-hour French courses above the intermediate level with a grade of B or better will receive an additional three credit hours equivalent to FRE 204. **STUDENTS TAKING FRE 203 OR 204 FOR CREDIT CANNOT RECEIVE CREDIT FOR THESE COURSES BY EXAMINATION.**
3. The student who scores extremely high will receive six hours of credit equivalent to the intermediate course. It is recommended that these students continue to take advanced courses in the language for which they have demonstrated considerable proficiency.

Examination	Score Range For 3 credits	Score Range for 6 credits
French	53 - 62	63 and above
German	48 - 60	61 and above
Spanish	50 - 59	60 and above

The Modern Languages and Classics Department accepts Advanced Placement Examinations in Foreign Languages and Literature for degree credit. See the Advanced Placement Credit table. Refer to the index for page number. Students who did not have two years of the same language in high school are admitted to a BA degree program on a "CONDITIONAL" status. They should check

with the Dean's Office regarding options for removing this "CONDITIONAL" status. Students are expected to make up this deficiency during their first year at the University of Maine.

**Black Studies:** These interdisciplinary courses are designed to cover selected topics in Black Studies, especially the African American Experience, from the African origins to the present day. They will provide students with an introduction to key issues and themes of Black culture in the Americas, North and South, Africa and Europe, as well as events of African American history and all people of African descent. Major topics of discussion will include the African past, the impact of slavery, emancipation and reconstruction. Cultural, social and political developments in the twentieth century, including the Civil Rights Movement, will be examined. Sociological and economic perspectives as well as issues of identity will be discussed. The African Diaspora, Africanisms, Pan-Africanism and contemporary African and African American issues will also be examined. These courses prepare students for intensive study of the Black Experience.

**Honors Program:** Qualified students in the College of Liberal Arts and Sciences are encouraged to participate in the university Honors Program. For academic and admission requirements to the Honors Program consult the index or contact the Director of the Honors Program. Further information concerning the relationship between the college and the Honors Program can be obtained from the college honors secretary.

**ISIS—Integrating into Interdisciplinary Study:** Designed especially for first year students, ISIS courses provide a unique academic Students experience. An interdisciplinary team of six faculty teaches each course. ISIS courses focus on the relationships among the disciplines. The classes are designed with a lecture one day and small seminars the second day of the week. Each seminar will have at least two instructors who might, for example, be a historian and a chemist, a linguist and a zoologist, or a mathematician and a sociologist. At all times, students will be presented with two distinct points of view from different disciplines.

First year students will get to know several of the University's faculty and develop friendships during the small seminars. ISIS courses are listed in the course descriptions under the ISIS designator.

**The Intensive English Institute:** The Intensive English Institute (IEI) of the University of Maine is part of the College of Liberal Arts and Sciences. Its primary emphasis is on preparing international students and non-native speakers of English for university study at UMaine and other American Universities and colleges, or for professional activities where English is the medium of communication. Two 14-week semesters with mid-term starting dates and one 7-week session in Intensive English are offered year round. 6 week TOEFL, University Prep, and 3-week conversation and culture courses are offered in the summer. Contract summer courses are also offered. In addition to a full-time course of study, the IEI offers academic advising, cross-cultural counseling, tutorials and self-study opportunities in a variety of content and skill areas. The Institute administers the TOEFL every semester. Students may also participate in the Conversational Partners Program. The IEI endorses the TESOL Standards for Postsecondary Programs and the NAFSA Principles of International Educational Exchange, and has met the standards of the American Association of Intensive English Programs (AAIEP). It is a member of NAFSA, TESOL, AAIEP, and EAIE.

The IEI provides specialized language training programs upon request for institutions and organizations, particularly in the area of Pre-Academic Skills, Teacher Training in English as a Second/Foreign Language and American Studies.

The IEI is committed to quality of instruction and service in its programs.

Our curriculum consists of six full time levels from beginning to advanced. Students are tested and placed into the appropriate level of instruction. There are four core classes totaling 20 hours per week. The four communication skills are addressed in integrated classes of Reading/Writing and Listening/Speaking. Students also take Grammar and Vocabulary Building. Beginning to intermediate students have additional supervised hours in the Language Lab, and high intermediate to advanced students may take Directed Study Skills.

IEI students are charged a set fee for each three-credit course. Students may enroll in one to four courses. The IEI accepts both matriculated and non-matriculated students.

*Native American Studies Program:*

The Native American Studies Program aspires to develop a broad scope of understanding for the students at the University of Maine about Native peoples, their traditions and their quest for self-determination. The program is designed around the belief that such explorations are the cornerstone of Native American Studies as an academic discipline in its own right, giving voice and credibility to the Native perspective, worldview and life experiences. The program offers an interdisciplinary curriculum that explores American Indians in the past and present, supporting the legitimacy of Native American scholarship. The program seeks to reinforce knowledge among Native students, while enhancing understanding among non-Native students. The presence of the Wabanaki Tribes within the State of Maine provides a tie to the history, language and vital culture unique to this state, and will be a major focus of the programs.

The program maintains high academic standards through the traditional pedagogy of Native communities, as well as Western-based academic standards. It focuses on the connection between the University and Native communities of Maine and surrounding areas, to ensure accuracy and authenticity in course offerings. It also seeks to strengthen the connections among Native and non-Native people on campus allowing respectful discussion of issues of significance to all.

Persons wishing information concerning the Native Studies Program or Native Studies courses may contact the Director of Native American Studies at the Wabanaki Center which is located in Dunn Hall, or call 581-1417.

**Minors:**

***Anthropology:*** (18 credits, at least 9 credits must be taken at UMaine)

- 3     ANT 101 Introduction to Anthropology: Human Origins and Prehistory
- 3     ANT 102 Introduction to Anthropology: Diversity of Cultures
- 6     Plus two of the following six courses:
  - ANT 221 Introduction to Folklore
  - ANT 317 Fundamentals of Archaeology
  - ANT 464 Cultural Ecology
  - ANT 465 Political Anthropology
  - ANT 466 Economic Anthropology
  - ANT 469 Theories of Religion
- 6     Plus 2 additional courses in Anthropology or Geography

***Art History:*** (21 credits)

The minor in art history is designed to serve the needs of students from a broad range of fields. After studying a comprehensive survey of the Western Tradition, students may select upper level courses according to their interests. These courses include offerings in both the Modern era (1800 onward) and the Pre-Modern eras that preceded it. The required introductory studio course will expose students directly to issues of artistic creativity, an essential component to understanding the History of Art. Transfer credits will be accepted for one hundred level courses only.

- 3 ARH 155 Art History I
- 3 ARH 156 Art History II
- 3 ART 100 Drawing I  
or, ART 110 2-D Design  
or, ART 120 3-D Design
- 3 ARH 2XX Pre-Modern Survey
- 3 ARH 2XX Modern Survey
- 3 ARH 3XX Pre-Modern Seminar
- 3 ARH 3XX Modern Seminar

**Chemistry:** (18 credits, at least 14 must be taken at UMaine)

1. At least 15 credits of CHY courses at the 200 level and above, including a 300 level laboratory or 400 level lecture course. Up to 3 credit hours of undergraduate research in Chemistry and BMB 322/322L or BMB 450 may be included.
2. 3 credits of General Chemistry may be applied to meet the 18-credit requirement.

**Classical Studies:** (18 credits)

The classical period in Western history, defined as the period from the Bronze Age to the fall of the Roman Empire in the 5th century C.E., comprises the “roots” of modern society. In order to understand where we are and where we are going, it is necessary to know where we have been. European and American literature, philosophy, law, religion, politics, language, and art have all been either directly or indirectly formed in reaction to Classical culture. By examination and study of classical civilization, the student will develop a sense of how the ancients responded to the universal questions of human experience. Through an implicit comparison of the cultures of ancient Greece and Rome to our own, the student will also come to have a fuller understanding of the humanist and cultural impulses which have formed and which continue to form our own experience. This minor is particularly useful to the student with interests in ancient history, philosophy, art history, anthropology, literature and political science. It will also prove useful to the student preparing for a career in law.

A minimum of 18 credits or 6 courses is required. The student who elects this minor normally chooses Latin as a fulfillment of the language requirement. The advanced student may choose ancient Greek rather than Latin (as available), with permission of the instructor. The student will take either two semesters of Latin beyond the elementary level or two semesters of Greek at elementary level or above. In addition, the student will take HTY 401, History of Greece or HTY 402, Roman History, and the remaining three courses in one or two areas listed below. The list below is flexible; new courses, special seminars, pertinent readings in upper level Honors courses, and independent study may be approved for Classical Studies.

Art History	ARH 155 Art History I ARH 251 Classical Art ARH 361 Topics in Art History
Classics	CLA 101 Greek Literature in English Translation CLA 102 Latin Literature in English Translation CLA 201 Women in the Ancient World CLA 202 Mythology of the Ancient Near East, Egypt and Greece
English	ENG 230 The Bible as Literature ENG 231 Western Tradition in Literature: Homer through the Renaissance ENG 435 The Bible and Near Eastern Literature
Greek History	(As offered). HTY 105 History of European Civilization I HTY 201 Classical Civilization HTY 401 History of Greece HTY 402 Roman History HTY 433 Greek and Roman Mythology HTY 434 Greek and Roman Heritage in America
Latin	LAT 203 Readings in Latin Literature I LAT 204 Readings in Latin Literature II

Modern Languages	MLC 231 Western Tradition in Literature: Homer through Renaissance
Philosophy	PHI 210 History of Ancient Philosophy
Political Science	POS 201 Introduction to Political Theory POS 301 Classical Political Thought
Theatre	THE 112 Masterpieces of World Drama I

**Communication:** (18 credits)

The minor in Communication consists of COM 201, COM 202, and four electives to total 18 credit hours. At least two of the electives must be at the 300 and 400 level. A grade of "C" (2.0) must be achieved in COM 201 and COM 202 and the grades for all 18 credit hours must average a "C." A minimum of nine COM credit hours must be taken at the University of Maine.

**Computer Science:** (18 credits)

- 3 COS 220 Introduction to Computer Science I
- 3 COS 221 Introduction to Computer Science II
- 3 COS 230 Computer Architecture and Assembly Language  
or, COS 250 Discrete Structures
- 9 Plus any three additional COS courses at the 300-level or above.

**Dance:** (18 credits)

The minor in dance is designed to provide the student with a basic foundation in dance technique, dance history, and choreography, with a focus towards production and performance. Students will receive dance technique training in ballet, modern, and jazz. In addition students will study composition and gain expertise in choreography. Those students who wish a concentration in dance history may select from a variety of courses addressing historical and contemporary issues. Dance students are encouraged to participate in the annual dance concert as well as informal studio showings and the activities of the UMaine Dance Company Club. Production credits may be available for these efforts.

**Core Courses**

- 2+2 DAN 101 Beginner Modern Dance (Repeated for credit)
- 2+2 DAN 102 Beginner Ballet (Repeated for credit)
- 3 DAN 250 Dance Composition I
- 2 DAN 201 Intermediate Modern Dance  
or, DAN 202 Intermediate Ballet  
or, DAN 203 Intermediate Jazz
- 5 Plus 5 credits from:
- 1-2 DAN 112 Production/Rehearsal (P/F Audition or permission)
- 3 DAN 266 Dance History
- 3 DAN 375 Dance in the 20th Century
- 2-4 DAN XXX Dance technique courses above 100 level

**Economics:** (18 credits, at least 9 credits must be taken at UMaine))

- 3 ECO 120 Principles of Microeconomics
- 3 ECO 121 Principles of Macroeconomics
- 3 ECO 420 Intermediate Microeconomics  
or, ECO 421 Intermediate Macroeconomics (with a minimum grade of C- in the option selected)
- 9 Three elective Economics (ECO) courses at the 300, 400, or 50 levels.

Students must obtain a minimum of 2.0 grade point average in Economics courses taken pursuant to requirements of the minor.

**Foreign Languages:** (18 credits)

The minor is offered in French, German, Latin, Russian, and Spanish. The requirements are a minimum of 18 credit hours in the language, 12 of which must be above the Intermediate level. For Russian, 18 hours are also required, with 12 credits of intermediate and above, with the following suggested sequence:



- 4 RUS 203 Intermediate Russian I
- 4 RUS 204 Intermediate Russian II
- 6 MLC 490 Topics in Modern Languages
- 4-4 credit hours Independent Study

**Franco-American Studies: (18 credits)**

In New England, and particularly in Maine where citizens of French Canadian and Acadian descent comprise approximately 35 percent of the population, the Franco-American community has struggled to maintain its language and culture for over a hundred years. The long-neglected story of this ethnic community represents a crucial element in the history and the current social dynamic of Maine and the Northeast, and constitutes a cultural bridge to Franco-Canada, particularly the neighboring provinces of Quebec and the Maritimes. In response to these realities the University of Maine has recently renewed its commitment, as originally articulated by President Winthrop Libby in 1973, to build a Franco-American program “of national and international stature,” one that authentically reflects the history, language, and culture of Franco-Americans of this region.

Focusing on Franco-Americans of the Northeast, the minor is designed to encourage students (Franco and Non-Franco) to engage a broad range of subjects particular to this ethnic community and, by extension, to become sensitized to issues of diversity implicit in the multicultural context of the larger society. Franco-American students may take advantage of the program to explore and reclaim their own cultural legacy.

The first course in Franco-American Studies, “Franco-Americans of the Northeast: Introduction to an Ethnic Community” (FAS 201) presents a broad spectrum of themes and issues relevant to the history and current realities of this ethnic community. FAS 201 will be offered annually or as demand dictates. A topics course (FAS 329) will be offered on a variety of topics submitted by faculty from across the academic disciplines. Students who wish to designate a minor in Franco-American Studies will complete at least eighteen credit hours, including FAS 201, FAS 329, a capstone experience (see coordinator) and a selection of “Related Courses” from the list below. Additional course options will be listed in succeeding catalogs as they are developed or as current departmental offerings become appropriate to the Franco-American Studies concentration. Students wishing to inquire about courses or the status of the minor should contact the program coordinator: James Bishop, Assistant Director for Academic Programs, Franco-American Center, (207) 581-3764.

- Core Courses FAS 201 Franco-Americans of the Northeast: Introduction to an Ethnic Community
- FAS 329 Topics in Franco-American Studies
- Related Courses ANT 300 Basic Theory in Cultural Anthropology
- ANT 456 Ethnic Conflict in the Modern World
- FRE 203 Intermediate French I
- FRE 204 Intermediate French II
- FRE 256 French Canadian Civilization
- FRE 297 French (May-Term)
- FRE 440 Franco-American Civilization
- HTY 111 Canada: From Cartier to Trudeau
- HTY 458 History of French Canada and Franco-Americans
- HTY 459 Colonial Canada

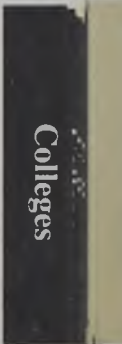
**History: (18 credits)**

A minor in History shall consist of at least 18 credit hours, of which at least 12 must be upper level courses. The 18 credits should include courses that cover more than one continent and more than one century.

**International Affairs: (24 credits)**

The minor in International Affairs is an interdisciplinary program that involves the Departments of Anthropology, Economics, History, Modern Languages and Political Science. The requirements are:

1. At least one year of a modern foreign language at the intermediate level (e.g., SPA 203 and 204.)
2. A total of 18 credits of coursework above the 100 level in Anthropology, Economics, History and Political Science. Students in the International Affairs minor are to take at least one course and no more than two courses in each of these disciplines, chosen from a list of approved courses with an



international focus. For a list of approved courses please see the "basic requirements" portion of the requirements for the BA in International Affairs in Anthropology listed in the "Programs" section of this catalog.

**Latin American Studies** (18 credits)

The Latin American Studies minor offers a series of courses in modern languages, anthropology, history and economics concerning Latin America designed to broaden the student's undergraduate education and increase his or her job opportunities. Although North Americans and Latin Americans share the "New World," they have little understanding of each other. North Americans have reacted to Latin America either by ignoring it, or through the most unfortunate stereotypes. Latin America cannot be ignored much longer. The area is rich in natural resources (most of the oil used in New England comes from Venezuela). It also presents a huge market for U.S.-made goods. The area currently is undergoing rapid and sometimes violent social change, as witnessed by events in Central America. Spanish speakers have become the largest immigrant group in the United States, and Cuba's Castro has been an acknowledged leader in the "Third World."

The size and diversity of Latin America make it difficult to comprehend. Brazil alone is larger than the continental United States. Latin American communities range from sparkling modern cities like Caracas and Rio de Janeiro to thousands of rural, traditional hamlets in the Amazon Basin and Central America. Although Spanish and Portuguese are the predominant languages, there are hundreds of different Indian societies, totaling millions of people who have maintained their traditional languages and cultures. Measured by North American standards, Latin America appears eccentric, inconsistent, and full of surprises. Measured by its own standards, it is orderly, consistent, and comprehensible.

The Latin American Studies minor combines training in languages, literature, and social sciences to allow students to begin to deal with this very different and increasingly important part of the world. The faculty involved in this minor have spent substantial time in Latin America.

1. **Language Competence.** The student must demonstrate proficiency in Spanish at the intermediate level. Proficiency may be demonstrated either by examination or by completing SPA 203/204 with a mark of "B" or higher. Students will not be admitted to the program until they have completed SPA 101/102. Course work in intermediate Spanish (SPA 203/204) will be counted toward the minor.
2. **Social Sciences and Literature.** In addition, the student is required to take at least one course in three of the following four areas:
  - Anthropology**   ANT 453 Peoples and Cultures of Mesoamerica,  
                          ANT 459 Peoples and Cultures of South America,  
                          ANT 467 Peasant Studies,  
                          ANT 476 Mesoamerican Prehistory,  
                          ANT 480 South American Prehistory.
  - Economics**     ECO 336 Marxian Economics,  
                          ECO 338 Economic Development.
  - History**         HTY 447 Latin America: Under the Conquerors,  
                          HTY 448 Latin America: Reform and Revolution,  
                          HTY 452 Topics in Latin American History.
  - Literature**     SPA 307 Readings in Peninsular Literature,  
                          SPA 308 Readings in Spanish American Literature.  
                          Another more advanced course in Latin American literature may fulfill this requirement (SPA 408, SPA 409, and SPA 410)

Additional courses in Anthropology, History, Latin American Literature and Spanish are recommended.

**Linguistics** (18 credits)

Linguistics is the field of study concerned with language, both as a general human faculty and as manifested in particular languages. The minor includes such topics as the acquisition of language, its sounds, meaning, structure, social and cultural aspects, families and dialects, and change.

1. **Core:** The following three courses must be completed for a minimum total of nine credit hours:
  - a. INT 410 Introduction to the Study of Linguistics

- b. ENG 477 Modern Grammar
  - c. CDS 480 Language Development
2. Electives: Students may select courses from among the following which, when added to those in the core, will complete the total of 18 credit hours:
- CDS 483 Anatomy and Physiology of the Speech Mechanism,
  - CDS 484 Introduction to Speech Science,
  - CDS 585 Children's Language Disorders,
  - COM 356 Speech Play and Performance,
  - COM 405 Women and Communication,
  - COS 220 Introduction to Computer Science I,
  - COS 221 Introduction to Computer Science II,
  - COS 301 Programming Languages,
  - COS 470 Introduction to Artificial Intelligence,
  - ENG 476 History of the English Language,
  - ENG 579 The Theory of Composition (also listed as COM 579),
  - FRE 420 French Phonetics,
  - FRE 442 French Language of North America,
  - FRE 499 Applied French Linguistics,
  - FRE 500 History of the French Language,
  - FRE 520 French Linguistics,
  - GER 403 History of the German Language,
  - MAT 241 Logic,
  - PHI 250 Formal Logic,
  - PHI 260 Philosophy of Language,
  - PHI 363 Theory of Knowledge,
  - PSY 522 Social Development in Children.

The enumeration here is not definitive. New courses, projects, special seminars, or pertinent reading in upper honors courses may be approved for this minor.

**Marxist/Socialist Studies:** (18 credits)

The Marxist/Socialist minor encourages students to look at the world from a Marxist/Socialist perspective. Many departments offer approaches that have their foundation in the work of such economic theorists as Adam Smith and such political philosophers as Thomas Hobbes and John Locke. Such approaches seem to assume that capitalist values are "natural," "according to human nature," progressive, just, or simply the only way that rational people would view the world. Marxism challenges such assumptions and judgments and such a world outlook.

All students who elect the Marxist/Socialist minor should take PHI 342, Marxist Philosophy I: The Philosophy of Karl Marx, and at least three other courses from the "core courses" and two courses from the "elective courses." In addition, these courses should be taken from at least three different disciplines.

- 3 PHY 342 Marxist Philosophy I: The Philosophy of Karl Marx,
- 9 Core Courses :
  - Economics ECO 431 Contemporary Alternatives in Political Economy
  - ECO 336 Marxian Economics
  - English ENG 470 Topics in Literary Theory and Criticism
  - History HTY 448 Latin America: Reform and Revolution
  - HTY 467 Early 20th Century American 1914 - 1945
  - HTY 468 America Since 1945
  - HTY 472 American Labor History
  - Philosophy PHI 106 Social Issues in Recent Religious and Philosophical Thought
  - PHI 342 Marxist Philosophy I: The Philosophy of Karl Marx
  - PHI 343 Marxist Philosophy II: Twentieth Century Marxist Philosophy
  - Sociology SOC 343 Sociology of Work and Labor
- 6 Elective Courses:
  - Art History ARH 262 Early Modern Art: Fauvism to Surrealism



	ARH 263 Late Modern Art: From Abstract Expressionism through New Forms
	ARH 351 Art History Theory and Criticism
	ARH 352 Critical Methods in History of Art
	ARH 362 Medieval Art and Architecture Seminar
	ARH 363 Renaissance Art and Architecture Seminar
Communication	COM 410 Social Influence of Mass Communication
	COM 444 Political Rhetoric
Economics	ECO 337 Comparative Economic Systems
	ECO 338 Economic Development
	ECO 335 History of Economic Thought
English	ENG 429 Topics in Literature: Race, Class, and Gender in 20th Century American Literature
	ENG 453 The Works of Shakespeare
	ENG 456 The English Romantics
	ENG 481 Topics in Women's Literature
History	HTY 407 The Age of Revolution, 1789-1860
	HTY 409 Twentieth Century Europe, (1914-1945)
	HTY 424 History of Russia II
	HTY 441 History of Modern China
	HTY 447 Latin America: Under the Conqueror
	HTY 473 American Diplomatic History I
	HTY 474 American Diplomatic History II
	HTY 482 Canada and the American Economy
	HTY 499 Contemporary Problems in History (The U.S. and Vietnam)
Philosophy	PHI 240 Social and Political Philosophy
	PHI 344 Theories of Justice
	PHI 439 Feminist Social and Political Theory
	PHI 465 Advanced Topics in Philosophy Equality and Community
	PHI 465 Advanced Topics in Philosophy Democracy, State and Society
Political Science	POS 336 Government and Politics in Russia and former Soviet Territories
Sociology	SOC 101 Introduction to Sociology
	SOC 202 Social Problems
	SOC 213 Deviance and Social Control
	SOC 314 Law and Society
	SOC 460 Major Ideas in Sociology

**Mathematics (24 credits)**

- 4 MAT 126 Calculus I
- 4 MAT 127 Calculus II
- 5 MAT 228 Calculus III
- 12 Any three of the following:
  - MAT 259 Differential Equations
  - MAT 261 Introduction to Abstract Mathematics
  - MAT 262 Linear Algebra
  - MAT 332 Statistics for Engineers
  - MAT 425 Introduction to Real Analysis I
  - MAT 426 Introduction to Real Analysis II
  - MAT 434 Introduction to Statistics
  - MAT 435 Introduction to Mathematical Statistics
  - MAT 436 Nonparametric Statistics
  - MAT 437 Statistical Methods in Research
  - MAT 451 Differential Equations and Dynamical Systems
  - MAT 452 Complex Analysis
  - MAT 453 Partial Differential Equations I

MAT 454 Partial Differential Equations II  
 MAT 455 Linear Programming  
 MAT 456 Network Optimization  
 MAT 457 Introduction to Mathematical Modeling  
 MAT 463 Introduction to Abstract Algebra I  
 MAT 464 Introduction to Abstract Algebra II  
 MAT 465 Theory of Numbers  
 MAT 471 Differential Geometry  
 MAT 481 Discrete Mathematics  
 MAT 487 Numerical Analysis

**Medieval and Renaissance Studies:** (18 credits)

The Medieval and Renaissance Studies minor opens to students the diverse cultures of Europe, Western Asia, and Northern Africa that thrived within the period from the third century through the seventeenth. It incorporates offerings from the departments of English, History, Modern Languages and Classics, and Art to explore issues of social structure, philosophy, religion, politics, language, poetry, prose, and artistic expression from an interdisciplinary perspective.

Students who elect this minor usually begin their exploration of the period through introductory courses, such as ARH 155, HON 101, HTY 105, or HTY 202, only one of which counts towards the total credits of the minor. Students are encouraged to take courses from all of its disciplines.

- |                               |   |
|-------------------------------|---|
| English                       | ENG 231 Western Tradition in Literature: Homer through the Renaissance<br>ENG 251 English Literature Survey: Beginning through Neoclassicism<br>ENG 253 Shakespeare: Selected Plays<br>ENG 451 Chaucer and Medieval Literature<br>ENG 454 Elizabethan and 17th Century Lyric and Narrative Poetry<br>ENG 476 History of the English Language  |
| History                       | HTY 105 History of European Civilization I<br>HTY 202 Medieval Civilization<br>HTY 402 History of Rome<br>HTY 403 Early Middle Ages<br>HTY 404 Late Middle Ages<br>HTY 405 The Renaissance and Reformation<br>HTY 419 Science and Society until 1800<br>HTY 423 History of Russia I<br>HTY 425 History of Germany I<br>HTY 427 Ideas in European Society I<br>HTY 455 History of England I<br>HTY 491 Technology and Society until 1800 |
| History of Art                | ARH 155 Art History I<br>ARH 252 Mediterranean Medieval Art and Architecture<br>ARH 253 Northern European Medieval Art and Architecture<br>ARH 255 Italian Renaissance Art<br>ARH 257 Northern Renaissance Art<br>ARH 362 Medieval Art and Architecture Seminar<br>ARH 363 Renaissance Art and Architecture Seminar<br>ARH 493 Medieval Research Seminar<br>ARH 494 Renaissance Research Seminar  |
| Modern Languages and Classics | FRE 404 Medieval and Renaissance French Literature<br>FRE 504 Seminar in Medieval and Renaissance Literature<br>LAT 482 Medieval Latin<br>MLC 231 Western Tradition in Literature: Homer through the Renaissance<br>SPA 425 Medieval Spanish Literature   |

**Multimedia:** (18-22 credits)

The phrase Multimedia signifies the study, invention, and creative use of new information technologies in the service of human expression, education, and communication. The field is deeply rooted in modern communication, the computer, and human sciences. Multimedia is a fledgling discipline, and all professional career paths within it are pioneering ones, which makes it impossible to precisely describe an optimum curriculum for any part of the field. Each student's studies will emphasize a particular interest area in which she or he will undertake their primary training in classroom, apprenticeship, or atelier modes.

The activities of the Multimedia minor cluster into several tracks. In order to achieve the broadest possible benefits from a minor in Multimedia, the minor is designed to offer choices from a wide variety of different subjects. In consultation with their advisor (or special minor advisor), students will design a unique, coherent curriculum sequence of courses (18-22 credits) to meet their particular interests. Students are encouraged to move beyond the introductory level in at least half of their curriculum and experience courses in different disciplines. Areas of concentration include graphic design, digital art and imaging digital music, digital video production, presentation and interactive multimedia design, and software construction and theory. Brochures further describing the program are available in the Dean's Office.

Before entry into the minor the student must have taken either COS 100 or COS 110 or be able to demonstrate a general knowledge of personal computers. Students must also seek permission from a Multimedia advisor to enroll in the minor.

**Options:**

1. *Design and Production*; Minor Advisor: Mike Scott, IT

3 MDM 206 Multimedia in the Electronic Age

6 choose at least 6 credits from the following:

ART 100 Drawing I

ART 110 2-D Design

ART 120 3-D Design

ART 180 Photography I

ART 200 Drawing II

ART 250 Graphic Design I

ART 350 Graphic Design II

MUY 101 Fundamentals of Music

6 MDM 430 Topics in Multimedia

3-6 MDM 295 Topics in Multimedia

2. *Music*; Minor Advisor: Stuart Marrs, School of Performing Arts

3 MDM 206 Multimedia in the Electronic Age

15-18 choose at least 15 - 18 credits from the following:

MUL 101 The Art of Listening to Music: Elements

MUL 202 The Art of Listening to Music II: Historical Survey

MUY 101 Fundamentals of Music

MUS 3xx Digital Music

MDM 295 Topics in Multimedia

MUS 3xx Internship

MUS 3xx Special Project

MDM 430 Topics in Multimedia

3. *Design*; Minor Advisors: Carole Nichols, Public Affairs, Alan Stubbs, Department of Psychology

3 MDM 206 Multimedia in the Electronic Age

3-6 choose at least 3 - 6 credits from the following:

ART 110 2-D Design

ART 180 Photography I

ART 250 Graphic Design I

ART 350 Graphic Design II

3 choose at least 3 credits from the following:

ARH 262 Early Modern Art: From Fauvism to Surrealism

- ARH 263 Late Modern Art: From Abstract Expressionism through  
New Forms
- ARH 351 Art Theory and Criticism
- ARH 361 Topics in Art Theory
- MDM 295 Topics in Multimedia
- PHI 262 Philosophy of Art
- PSY 305 Psychological Aesthetics
- 9–12 choose 9 - 12 credits from the following:
- COS 460 Interactive Computer Graphics
- COS 461 Advanced Computer Graphics
- MDM 430 Topics in Multimedia
- MDM 430 Topics in Multimedia-Computer/Graphic Design Thesis Project
4. *Art and Imaging:* Minor Advisor: Brooke Knight, Department of Art
- 3 MDM 206 Multimedia in the Electronic Age
- 3–6 choose at least 3 - 6 credits from the following:
- ART 100 Drawing I
- ART 110 2-D Design
- ART 180 Photography I
- ART 200 Drawing II
- ART 250 Graphic Design I
- ART 350 Graphic Design II
- 3 choose at least 3 credits from the following
- ARH 262 Early Modern Art: From Fauvism to Surrealism
- ARH 263 Late Modern Art: From Abstract Expressionism through New
- ARH 351 Art Theory and Criticism
- ARH 361 Topics in Art History
- MDM 295 Topics in Multimedia
- PSY 305 Psychological Aesthetics
- PHI 262 Philosophy of Art
- 9–12 choose 9 - 12 credits from the following:
- MDM 430 Topics in Multimedia 6
- MDM 430 Topics in Multimedia-Digital Art and Imaging Thesis Project\*
5. *Video Production:* Minor Advisor: Paula Petrik, Department of History
- 3 MDM 206 Multimedia in the Electronic
- 6 choose at least 6 credits from the following
- ART 100 Drawing I
- ART 110 2-D Design
- ART 120 3-D Design
- ART 180 Photography I
- ART 200 Drawing II
- ART 250 Graphic Design I
- ART 350 Graphic Design II
- MUY 101 Fundamentals of Music
- 6–9 MDM 430 Topics in Multimedia
- 3–6 MDM 295 Topics in Multimedia
6. *Software Design:* Minor Advisor: Larry Latour, Department of Computer Science
- 3 MDM 206 Multimedia in the Electronic Age
- 3 COS 498 Topics in Computer Science
- 3–6 MDM 430 Multimedia Systems Design Practicum
- 6–9 choose at least 6 - 9 credits from the following
- COS 220 Introduction to Computer Science I
- MDM 295 Topics in Multimedia
- COS 301 Programming Languages
- COS 110 Introduction to Personal Computers using the Macintosh
- 3–6 Choose 3-6 credits from the following

ART 100 Drawing I  
 ART 110 2-D Design  
 ART 200 Drawing II  
 COS 460 Interactive Computer Graphics  
 MDM 430 Topics in Multimedia -Scripting

**Music:** (21-22 credits)

The minor in music is designed to give the student a significant educational experience in the musical arts. An audition is not required for admission, however auditions are required for studio instruction and some performing ensembles. a non-music major fee structure applies. The requirements are as follows:

- 1 MUL 200 The Art of Listening to Music: Historical Survey Lab
- 3 MUL 202 The Art of Listening to Music: Historical Survey
- 2 MUY 111 Elementary Harmony I
- 2 MUY 112 Elementary Harmony II
- 3-4 MUH 2XX *and/or* MUY 2XX
- 4 MUO XXX *and/or* MUS XXX *and/or* MUE 2XX
- 6 MUX XXX music electives to be selected in consultation with music minor faculty advisor

**Philosophy:** (18 credits)

- 6 Philosophy courses at any level
- 6 Philosophy courses from above the 100-level
- 3 PHI 200 Problems in Recent Philosophy
- 3 PHI 210 History of Ancient Philosophy  
*or*, PHI 312 History of Modern Philosophy

**Physics:** (21 credits, 12 specified and 9 elective)

- 8 PHY 111/112 General Physics I/II  
*or*, PHY 121/122 Physics for Engineers and Physical Scientists I/II
- 4 PHY 236 Introductory Modern Physics
- 9 Three or more courses from the following list which total at least 9 credit hours
  - PHY 238 Mechanics
  - PHY 447 Molecular Biophysics
  - PHY 454 Electricity and Magnetism I
  - PHY 462 Physical Thermodynamics
  - PHY 463 Statistical Mechanics
  - PHY 469 Quantum and Atomic Physics
  - PHY 470 Nuclear Physics
  - PHY 471 Nuclear Physics Laboratory
  - PHY 472 Geometrical and Fourier Optics
  - PHY 475 Methods of Mathematical Physics
  - PHY 480 Physics of Materials

The Department Chairperson may consider exceptions to this list on a case-by-case basis.

**Astronomy:** (21 credit hours, 12 specified and 9 elective).

- 8 PHY 111/112 General Physics I/II  
*or*, PHY 121/122 Physics for Engineers and Physical Scientists I/II
- 4 PHY 236 Introductory Modern Physics
- 9 Two or more courses from the following list which total at least 9 credit hours.
  - AST 110 Introduction to Astronomy Laboratory
  - AST 114 Navigation
  - AST 215 General Astronomy I
  - AST 216 General Astronomy II
  - AST 451 Astrophysics I\*
  - AST 496 Topics in Astrophysics\*

\*These courses may be taken for 1-3 credit hours, as arranged.

The Department Chairperson may consider exceptions to this list on a case-by-case basis.



**Psychology: (18 credits)**

Any 18 hours of Psychology (PSY) courses constitute a minor in Psychology. A minimum grade of "C-" must be obtained in each course used to satisfy the Psychology minor. No more than six hours total of PSY 492 and PSY 493 may be used toward the 18 hours. A minimum of 12 Psychology credits must be taken at UMaine. All transfer courses applied to the minor must be approved by the Department of Psychology.

**Religious Studies: (18 credits)**

Traditionally, questions about the ultimate meaning of human existence have been posed in the form of religion. Today we live in a world in which religion and religious ideas are often in serious conflict; it is thus also important to understand some of the problems connected to religion. Courses included in the religious studies minor are designed to help students understand what these questions are, what kind of answers people have found to them, and how societies have given institutional form to the world-views which emerge from the answers. A student who elects this minor should develop an awareness of the broad range of religious phenomena and an ability to analyze and elucidate the significance of such phenomena.

**Option A: *Religion in the Development of Western Civilization***

3 PHI 105 Introduction to Religious Studies

15 Five of the following courses

- ARH 252 Mediterranean Medieval Art and Architecture,
- ARH 253 Northern European Medieval Art and Architecture,
- ARH 255 Italian and Renaissance Art,
- ARH 257 Northern Renaissance Art,
- ARH 258 Baroque Art and Architecture,
- CLA 101 Greek Literature in English Translation,
- CLA 102 Latin Literature in English Translation,
- CLA 201 Women in the Ancient World,
- CLA 202 Mythologies of the Near East, North Africa, and Greece,
- ENG 230 The Bible as Literature,
- ENG 241 American Literature Survey: Beginnings through Romanticism,
- ENG 435 The Bible and Near Eastern Literature,
- ENG 451 Chaucer and Medieval Literature,
- ENG 454 Elizabethan and 17th Century Lyric and Narrative Poetry,
- FRE 404 Medieval and Renaissance French Literature,
- FRE 405 Seventeenth Century French Literature,
- HTY 401 History of Greece,
- HTY 402 Roman History,
- HTY 403 Early Middle Ages,
- HTY 404 Late Middle Ages,
- HTY 405 The Renaissance and Reformation,
- HTY 433 Greek and Roman Mythology,
- HTY 499 Contemporary Problems in History-History of Religion,
- LAT 482 Medieval Latin,
- MLC 490 Topics in Modern Languages: Myth, Magic, and Mystery: Spiritual Legacies,
- MUL 101 The Art of Listening to Music: Elements,
- MUL 120 World Music,
- MUL 202 The Art of Listening to Music: Historical Survey .

**Option B. *Theoretical Perspectives on Religion***

3 PHI 105 Introduction to Religious Studies

15 Five of the following courses

- ANT 120 Religions of the World,
- ANT 469 Theories of Religion,
- ANT 470 Religion and Politics,
- PHI 105 Introduction to Religious Studies,
- PHI 364 Views of the Self: East and West,

PHI 382 Theories of Myth.  
PHI 490 Topics in Religious Studies.  
SOC 482 The Sociology of Religion

**Option C. Religion in the Non-Western World**

- 3 PHI 105 Introduction to Religious Studies
- 15 Five of the following courses

ANT 441 People and Cultures of the Pacific Islands.  
ANT 451 North American Indian Ethnology.  
ANT 453 Peoples and Cultures of Mesoamerica.  
ANT 454 Cultures and Societies of the Middle East.  
ANT 456 Ethnic Conflict in the Modern World.  
ANT 460 Peoples and Cultures of the Circumpolar Area.  
ANT 461 Islamic Fundamentalism.  
HTY 435 History of China I  
HTY 436 History of China II.  
HTY 437 History of Modern Japan.  
PHI 286 Religions and Philosophies of the East: Hinduism.  
PHI 287 Religions and Philosophies of the East: Buddhism.

**Option D. Religion in the Contemporary World**

- 3 PHI 105 Introduction to Religious Studies
- 3 PHI 106 Social Issues in Recent Religious and Philosophical Thought

**Rhetoric and Writing : (18 credits)**

This sequence of courses focuses on a broad range of rhetorical and compositional skills such as discourse analysis, critical thinking and argumentation, problem solving, field and library research, and practical writing. Particularly appropriate for majors in business, scientific and technological fields, a minor in Rhetoric and Writing can be advantageous in today's highly competitive job market where strong communication skills are essential.

The minor consists of courses that treat both concepts and practices; its goal is to enable students to analyze writing situations and conventions (discourse analysis), to convey information clearly and to formulate persuasive arguments (expository writing), and to write effectively in professional contexts. Since most of the courses have prerequisites, students should plan to begin the minor by taking ENG 212, ENG 225, ENG 205, and/or ENG 206 in their sophomore year and ENG 317 in their junior year. A member of the English Department will serve as minor advisor to help students plan an appropriate program given their academic background and interests. The requirements for a minor in Rhetoric and Writing are as follows:

- 3 ENG 205 An Introduction to Creative Writing  
or, ENG 206 Descriptive and Narrative Writing  
or, ENG 225 Topics in Language
- 3 ENG 212 Persuasive and Analytical Writing
- 3 ENG 301 Advanced Composition  
or, ENG 310 Writing and Careers in English  
or, ENG 395 English Internship  
or, ENG 401 Topics in Writing
- 3 ENG 317 Business and Technical Writing (should be taken junior year)
- 6 credits to be chosen from the following:
  - ENG 417 Advanced Professional Writing
  - ENG 418 Topics in Professional Writing
  - ENG 496 Field Experience in Professional Writing

**Sociology (18 credits, 9 in courses at UMaine)**

- 3 SOC 101 Introduction to Sociology
- 3 SOC 201 Social Inequality
- 3 Any level Sociology elective

9 300-400 level Sociology electives

A grade of C (2.0) must be achieved in SOC 201, and the grades for all 18 credits must average a "C"

**Studio Art:** (21 credits)

The minor in studio art is designed for non-majors who are interested in developing a basic understanding of art theory, processes, and media. A total of 21 credit hours is required. Transfer credit is subject to approval by the Department of Art studio faculty.

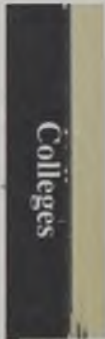
- 3 ART 100 Drawing I
- 3 ART 200 Drawing II
- 3 ART 110 2-D Design
- 3 ART 120 3-D Design
- 3 ARH 155 Art History I  
or, ARH 156 Art History II
- 6 credit hours in specialty studio area courses:  
3-6 credits in the following introductory courses:
  - ART 220 Sculpture I
  - ART 230 Painting I
  - ART 240 Printmaking IOr, 3 credits in one of the above introductory courses and 3 credits in its related intermediate level course:
  - ART 320 Sculpture II
  - ART 330 Painting II
  - ART 340 Printmaking II

**Theatre:** (21 credits)

- 3 THE 112 (or) 113 Masterpieces of World Drama I (or) II
- 3 THE 116 Play Production
- 3 THE 117 Fundamentals of Acting
- 3 THE 118 Stage Makeup
- 3 THE 119 Fundamentals of Theatre Practice
- 6 credits in any Theatre courses at the 200 level or above provided that prerequisites are met.

**Women's Studies:** (18 credits)

- 3 WST 101 Introduction to Women's Studies
- 3 WST 410 Feminist Theory (given Fall semesters)
- 3 WST 480 Senior Seminar in Women's Studies (given Spring semesters)
- 9 credits chosen from among the following:
  - WST 201 Topics in Women's Studies
  - WST 301 Intermediate Topics in Women's Studies
  - WST 401 Advanced Topics in Women's Studies
  - Field Experience
  - WST 298 or WST 498 Directed Study in Women's Studies
  - Approved Electives:
    - CHF 451 Family Relationships,
    - CHF 452 Violence in the Family,
    - COM 405 Women and Communication,
    - EDL 420 Changing Roles of Women and Men in Education,
    - ENG 246 American Women's Literature,
    - ENG 256 British Women's Literature,
    - ENG 471 Feminist Literacy Criticism,
    - ENG 481 Topics in Women's Literature,
    - HTY 332 Womanhood in America,
    - HTY 494 Women, History and American Society: Selected Topics,
    - NUR 420 Women in Health,
    - PHI 439 Feminist Social and Political Theory,



SOC 330 Perspectives on Women,  
SOC 345 Women, Crime, and Criminal Justice,  
THE 470 Women Playwrights.

A number of "topics" courses in various departments occasionally focus entirely on women, and other courses have partial content on women that may make them suitable as approved electives, other courses have been proposed that may be approved as electives. For lists of such courses and their availability, contact the WIC office.

**College of Natural Sciences, Forestry, and Agriculture**  
**105 Winslow Hall**  
<http://www.ume.maine.edu/~nfa/college/nrforag.htm>

The College of Natural Sciences, Forestry, and Agriculture specializes in programs related to understanding and responsible management of the world's natural resources. It consists of ten departments and one school, which offer academic programs at both the undergraduate and graduate level. The college offers a diversity of programs taught by a faculty, which represents the largest assemblage of scientific expertise in Maine. In addition to forestry, wildlife, and a full selection of natural resource based programs, students can choose programs of study from the full spectrum of biological sciences, marine sciences, geological sciences, and food science and human nutrition. Students may also prepare for medical school, veterinary school, and other health professions.

The undergraduate programs of the college are designed to develop proficiency in a specific discipline or profession and to provide a broad general education. The college has extensive teaching and research facilities, plus some of the most sophisticated research equipment available anywhere. In addition, with its broad geographic, climatic, and landscape diversity, the state of Maine provides an exceptional outdoor laboratory for students interested in the natural sciences, forestry, and agriculture.

G. Bruce Wiersma, <i>Dean</i> (207) 581-3202 wiersma@apollo.umenfa.maine.edu	Alan S. Kezis, <i>Associate Dean</i> (207) 581-3206 alan.kezis@umit.maine.edu	Brenda Astbury, <i>contact person</i> (207) 581-3206 nsfa@umit.maine.edu
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**Schools and Departments:**

Department of Applied Ecology and Environmental Sciences	Ivan Fernandez, Chair	(207) 581-2932
Department of Biochemistry, Microbiology and Molecular Biology	Bruce Nicholson, Chair	(207) 581-2800
Department of Biological Sciences	J. Malcolm Shick, Chair	(207) 581-2551
Department of Biosystems Science and Engineering	Charles Wallace, Chair	(207) 581-2770
Department of Food Science and Human Nutrition	Mary Ellen Camire, Chair	(207) 581-1627
Department of Forest Ecosystem Science	William Livingston, Chair	(207) 581-2990
Department of Forest Management	David Field, Chair	(207) 581-2856
Department of Geological Sciences	Stephen Norton, Chair	(207) 581-2156
Department of Resource Economics and Policy	Stephen Reiling, Chair	(207) 581-3150
Department of Wildlife Ecology	James Gilbert, Chair	(207) 581-2866
School of Marine Sciences	Bruce Sidell, Director	(207) 581-4381
Natural Resources Program	Mark Anderson, Coordinator	(207) 581-3228

**Academic Programs:**

**Bachelor of Arts in:**

- Biochemistry
- Biology
- Botany
- Clinical Laboratory Sciences
- Geological Sciences
- Microbiology
- Zoology

**Bachelor of Science in:**

- Animal and Veterinary Sciences
- Aquaculture
- Biochemistry
- Biology
- Bio-Resource Engineering

**Minors:**

- Agribusiness and Resource Economics
- Animal and Veterinary Sciences
- Biochemistry
- Biology
- Plant Biology (for non-majors)
- Food Science
- Forest Products
- Geological Sciences
- Human Nutrition
- Landscape Horticulture
- Marine Resources
- Microbiology
- Molecular and Cellular Biology
- Natural Resources

Bio-Resource Engineering Technology  
Botany  
Food Science and Human Nutrition  
Forest Ecosystem Science  
Forest Engineering  
Forestry  
Geological Sciences  
Landscape Horticulture  
Marine Science  
Microbiology  
Molecular and Cellular Biology  
Natural Resources  
Parks, Recreation and Tourism  
Resource Management and Environmental Policy  
Sustainable Agriculture  
Wildlife Ecology  
Wood Science and Technology  
Zoology

Parks, Recreation and Tourism  
Plant Science  
Soil Science  
Sustainable Agriculture  
Zoology

### **College of Natural Sciences, Forestry and Agriculture Graduation Requirements:**

The college offers both Bachelor of Science and Bachelor of Arts degrees. Each program has its specific curriculum and all include the general education requirements of the university. To obtain a Bachelor of Arts degree students must complete, within their program of study, 27 credit hours in courses meeting the human values and social context general education criteria of the university. At least 12 credit hours of these must be at the 200 level or above. In addition, students must complete a minimum of 72 credit hours outside their major. (If a particular major requires courses in another discipline, either within the same department or in another department, those credit hours may still count toward the 72 credit hours.) Depending on the particular program, the degree will require from 120 to 141 total credit hours for graduation. In addition, each student must achieve a grade point average of 2.0 over all courses taken. Some programs may also require minimum grade point averages for courses within the major. Students should consult individual program sections about specific details concerning a particular major.

### **College of Natural Sciences, Forestry and Agriculture Notes:**

The college has a well-developed, student-oriented academic advising system. Each student has a faculty advisor who assists in program planning and career development. Throughout the undergraduate years, the capabilities, aspirations, and goals of the students are the primary concerns governing the advising process. In the college, students find an environment small enough to feel that they are more than just a number, but large enough to provide the modern facilities necessary for a comprehensive education preparing them for the challenges of tomorrow.

Students may select a degree program upon entering the college, or may delay a formal choice of major until the sophomore year. In addition to the major, students have the option of selecting one of more than 20 minors. These optional minors range from such disciplines as chemistry, to various humanities and social sciences. Choice of minor enables students to strengthen their preparation in the major by selecting supporting courses from a related discipline.

#### *Admission Requirements:*

Entrance requirements for the college include the following high school units: four years of English, three years of mathematics (selected programs require four years of mathematics and it is encouraged for all programs), two years of social science, and a minimum of two years of laboratory sciences (selected programs require three years of laboratory sciences). One year of fine arts and one year of computer science are highly recommended. Two years of a single foreign language are required for BA programs.

#### *Honors Program:*

Qualified students in the College of Natural Sciences, Forestry and Agriculture are encouraged to participate in

the University Honors Program. For academic and admission requirements to the Honors Program consult the index or contact the Director of the Honors Program. Further information concerning the relationship between the college and the Honors Program can be obtained from Dr. Alfred A. Bushway, the college honors secretary.

*Education (Teacher certification):*

The Maine Department of Education has the sole authority to issue certificates for teaching. However, the Office of the Dean of the College of Education and Human Development advises and assists qualified students in obtaining state certification at the elementary and secondary school level. In addition to required course work and professional training, the program requires a full semester of student teaching. All students interested in teacher certification should contact the College of Education and Human Development early during their program.

Students specifically interested in teaching in the agricultural sciences can obtain certification through cooperation with the University of New Hampshire. Students spend a semester at the University of New Hampshire completing teacher education courses related to the agrisciences. Required student teaching can be completed in a high school in Maine or New Hampshire.

**Minors:**

A Minor is a secondary specialization in a discipline or in a formal interdisciplinary program which complements or augments the Major program. Students choosing to take a minor usually do so either to strengthen their preparation in the major program or to prepare themselves for a broader range of career opportunities. Once all of the requirements of the minor program are met, the Associate Dean's office will certify to the Director of Student Records that the minor has been completed.

Minors are strictly optional: you are not required to complete a minor. If you do decide to complete a minor, the requirements of the minor are in addition to the specific requirements of your major. The specific requirements for each approved minor in the College of Natural Sciences, Forestry, and Agriculture are detailed below. Minors offered by other colleges are listed under their respective sections. Free electives are normally used to satisfy minor requirements and it normally will not involve additional credits to those required for completion of the major.

If you decide to work towards a minor program in addition to the major, you need to visit the Associate Dean's Office, 106 Winslow Hall, to declare your intentions. If this is not done, we cannot guarantee that proper certification of the minor will appear on the transcript. If you begin work on a minor but fail to meet all of the requirements, there is no penalty: no reference to the minor will appear on the transcript.

***Agribusiness and Resource Economics:*** (18 credits)

- 3 INT 110 Modern Economic Problems
- 3 REP 254 Introduction to Production Economics
- 3 REP 459 Resource Based Business Finance
- 3 REP 465 Food and Fiber Marketing
- 6 plus two courses selected from the following:
  - REP 286 Resource Policy Analysis
  - REP 458 Principles of Resource Business Management
  - REP 468 Quantitative Analysis and Forecasting

***Animal and Veterinary Sciences:*** (20-21 credits)

Prior to enrolling in the minor, students must consult with the chairperson of the department of Biosystems Science and Engineering to select the courses most appropriate to their background and career goals, and to arrange any course substitutions, which may be appropriate.

- 4 AVS 145 Animal Science
- 6 The student selects two courses from the following list:
  - AVS 249 Lab Animal Technology
  - AVS 285 Applied Avian Biology
  - AVS 346 Dairy Cattle Technology

- AVS 348 Livestock Management
- AVS 351 Animal Science Techniques
- AVS 445 Sustainable Livestock Production Systems
- 6 The student selects an additional two courses from the following list:
  - AVS 437 Animal Diseases
  - AVS 455 Animal Nutrition
  - AVS 461 Animal Breeding
  - AVS 480 Physiology of Reproduction
  - AVS 462 Feed Technology
- 1-2 AVS 463 Feeding Companion Animals  
or, AVS 466 Feeding Dairy Cattle
- 3 Plus 3 additional credits in AVS courses

**Biochemistry: (18 credits)**

- 3 BMB 322 Biochemistry
- 1 BMB 322L Biochemistry Laboratory
- 3 BMB 450 Principles of Biochemistry
- 3 BMB 460 Advanced Biochemistry
- 8 upper level courses selected from courses offered by the department and required for the major

**Biology: (18 credits)**

- 4 BIO 100 General Biology
- 3 BIO 200 Biology of Organisms
- 3 BMB 280 Introduction to Molecular and Cellular Biology
- 3 BMB 300 General Microbiology
- 2 BMB 305 General Microbiology Laboratory
- 3 upper-level course that meets the requirements of the departmental major

**Food Science: (18 credits)**

The courses that make up the minor in Food Science are to be selected from the following list following consultation with member of the food science faculty. This minor may be of interest to science or business majors who wish to seek employment in the food industry or with government agencies associated with food.

- 3 FSN 330 Introduction to Food Science
- 15 The additional 15 credits may include :
  - FSN 340 Food Processing Laboratory
  - FSN 350 Food Process Sanitation
  - FSN 382 Introductory Food Chemistry
  - FSN 438 Food Microbiology
  - FSN 436 Food Law
  - INT 482 Pesticides and the Environment
  - FSN 502 Food Preservation
  - FSN 582 Major Food Constituents
  - FSN 583 Microbial Ecology and Foods
  - FSN 585 Sensory Evaluation of Foods
  - FSN 587 Food Analysis
  - REP 465 Food and Fiber Marketing

Also, not more than 6 credit hours of FSN 397 - Independent Studies and not more than 6 credit hours of FSN 396 - Field Experience in Food Science and Human Nutrition may be counted towards the 18-credit total.

**Forest Products: (18-22 credits)**

- 3 WSC 212 Introduction to Wood Science and Technology I \*
- 1 WSC 213 Hand Lens ID of Wood Laboratory\*
- 4 WSC 314 Wood and Wood Fiber Processing \*
- 3 WSC 318 Wood and the Environment



- 3 WSC 319 Wood Deterioration and Protection
- 1-3 WSC 345 Special Problems
- 3 WSC 416 Wood Anatomy
- 4 WSC 425 Mechanical Properties of Wood

Students minoring in Forest Products must be assigned an advisor from the Faculty of Wood Science and Technology in the Department of Forest Management, and must obtain the Advisor's signature when registering for WSC courses.

\*Forestry majors already choose between WSC 212/213 and WSC 314, so the total requirement of this major for Forestry majors is 18 credits. For others it is 22.

**Geological Sciences:** (18-20 credits)

A minor in Geological Sciences consists of minimum of 18 credits of courses in the department, no more than 8 of which are at the 1xx level. No grade below a C- will be accepted toward these requirements.

- 4 GES 101 Introduction to Geology  
Or, GES 102 Environmental Geology of Maine  
Or, GES 106 Geology for Engineers
- 14-16 At least 4 of the following courses:
  - 4 GES 315 Principles of Sedimentology and Stratigraphy
  - 3 GES 314 Invertebrate Paleontology
  - 3 GES 324 Geology of North America
  - 4 GES 330 Mineralogy
  - 4 GES 333 Igneous and Metamorphic Petrology
  - 4 GES 416 Structural Geology

Note: No more than one course from the following: GES 103, 104, 105, 109, 110, 140.

**Human Nutrition:** (18 credits)

The courses, which make up the minor in Human Nutrition are to be selected from the following approved list in consultation with a member of the Human Nutrition faculty. Courses will be chosen to complement each student's academic background and to further individual career goals. The minor does not lead to credentialing in the field of dietetics without further study.

- 3 FSN 101 Introduction to Food and Nutrition
- 15 FSN 103 Family Food Management
- FSN 200 Food Service Systems Management I
- FSN 201 Food Service Systems Management II
- FSN 230 Nutritional and Medical Terminology
- FSN 238 Applied Food Microbiology and Sanitation
- FSN 270 World Food and Nutrition
- FSN 401 Community Nutrition
- FSN 280 Human Nutrition for the Health Professions
- FSN 301 Life Cycle Nutrition
- FSN 330 Introduction to Food Science
- FSN 471 Recent Advances in Food and Nutrition
- FSN 410 Human Nutrition and Metabolism
- FSN 420 Nutrition in Disease and Diet Therapy
- FSN 436 Food Law

**Landscape Horticulture:** (23-24 credits)

- 4 AES 100 Plant Science
- 3 AES 140 Soil Science
- 1 AES 141 Soil Science Laboratory
- 3 LHC 110 Horticulture

- 2 LHC 111 Applications in Horticulture
- 1 LHC 370 Seminar in Landscape Horticulture
- 6 Plus two courses from the following list:
  - LHC 119 Herbaceous Landscape Plants I
  - LHC 120 Herbaceous Landscape Plants II
  - LHC 221 Woody landscape Plants I
  - LHC 222 Woody Landscape Plants II
- 3-4 plus one course from the following list:
  - LHC 223 Plant Production
  - LHC 325 Turfgrass Management
  - LHC 328 Landscape Design
- 3-4 plus one additional course selected from the following list:
  - Any LHC course 200 level or higher
  - AES 457 Plant Pathology
  - BIO 201 Plant Biology/Lab
  - BIO 327 Introductory Applied Entomology
  - BIO 452/453 Plant Physiology/Lab
  - BIO 464 Taxonomy of Vascular Plants
  - LHC 410 Plant Propagation

**Marine Resources: (18 credits)**

The minor in Marine Resources is designed for students in the College of Natural Sciences, Forestry, and Agriculture who wish to apply the knowledge and skills developed through their major programs to the problems of the marine environment. The minor consists of a common core plus two options (marine technology and marine resource utilization).

- 2 SMS 220 Introduction to Marine Resources
- 3 SMS 301 Concepts in Oceanography  
*Or, SMS 270 Introduction to Oceanography*
- 3 REP 471 Resource Economics
- 10 Plus ten or more credit hours of courses from the following option lists, chosen to include at least two courses from one of the two areas of specialization.
  - Marine Resource Utilization Option
    - BIO 472 Fishery Biology
    - BIO 473 Biology of Algae
    - BIO 319 General Ecology
    - REP 371 Introduction to Natural Resource Economics and Policy
    - REP 577 Economics of Public Choice
    - SMS 211 Introduction to Aquaculture
    - SMS 340 Finfish Aquaculture
    - SMS 409 Shellfish Aquaculture
    - SMS 420 Fish Health Management
    - SMS 467 Fish Nutrition and Feeding
  - Marine Technology Option
    - BRE 469 Agricultural Process Engineering
    - BRE 550 Simulation of Biological and Physical Systems
    - CIE 558 Coastal Engineering
    - CIE 559 Numerical Modeling of Lake and Estuarine Processes

**Microbiology: (18 credits)**

- 3 BMB 322 Biochemistry
- 1 BMB 322L Biochemistry Laboratory
- 3 BMB 300 General Microbiology
- 2 BMB 305 Microbiology Laboratory
- 9 Plus 9 credits of upper level microbiology courses required for the major

**Molecular and Cellular Biology:** (18 credits)

- 3 BMB 280 Cellular and Molecular Biology
- 3 BMB 322 Biochemistry
- 1 BMB 322L Biochemistry Laboratory
- 3 BMB 400 Molecular Genetics
- 8 Plus 8 credits of upper level courses offered by the department and required for the major.

**Natural Resources:** (18-19 Credits)

- 3 NRC 100 Introduction to Natural Resources
- 3 NRC 489 Critical Issues in Natural Resources Policy
- 3-4 AES 140 Soil Science  
*Or, GES 101 Introduction to Geology*
- 3 WLE 200 Ecology  
*Or, BIO 319 General Ecology*
- 4 BIO 205 Field Natural History of Maine  
*Or, BIO 300 Field Marine Biology*
- 3 One of the following:
  - REP 371 Introduction to Natural Resources Economics and Policy
  - NRC 324 Environmental Protection Law and Policy
  - INT 330 Waste Management
  - REP 381 Sustainable Development Principles and Policy

**Parks, Recreation, and Tourism:** (19 credits)

Students minoring in Parks, Recreation, and Tourism must be assigned an advisor from the Faculty of Parks, Recreation and Tourism in the Department of Forest Management and must obtain the advisor's signature when registering for these courses.

- 3 LHC 429 Park Planning and Design
- 3 PRT 352 Forest Recreation Management
- 4 PRT 452 Environmental Interpretation
- 3 PRT 470 Principles of Tourism
- 3 PRT 480 Wilderness and Wild and Scenic River Management
- 3 PRT 355 Visitor Behavior and Management  
*Or, PRT 454 Cultural Resource Management*  
*Or, PRT 471 Commercial Recreation*

**Plant Biology:** (19-20 credits)

The minor in Plant Biology is designed for non-majors who would like to develop a basic understanding of the structure, function, and diversity of plants. The requirements for the minor in Plant Biology include the following:

- 4 BIO 202 Plant Diversity
- 4 BIO 435 Plant Anatomy
- 3 BIO 452 Plant Physiology
- 1 BIO 453 Plant Physiology Laboratory
- 4 BIO 464 Taxonomy of Vascular Plants
- 3-4 an additional 3-4 credits of BIO courses numbered above the introductory level.

**Plant Science:** (22-24 credits)

- 4 AES 140/141 Soil Science/Laboratory
- 4 BIO 452/453 Plant Physiology/Laboratory
- 4 AES 100 Plant Science
- 4 AES 101 Cropping Systems  
*Or, LHC 223 Plant Production*
- 6-8 Plus two courses from the following list:
  - AES 401 Advanced Crop Management
  - AES 403 Weed Ecology and Management

BIO 435 Plant Anatomy  
AES 440 Soil Chemistry and Plant Nutrition  
BIO 445 Plant Genetics  
AES 457 Plant Pathology  
AES 479 Crop Ecology and Physiology  
BIO 464 Taxonomy of Vascular Plants  
LHC 410 Plant Propagation

**Soil Science:** (22-24 credits)

- 4 AES 140/141 Soil Science/Laboratory
- 3 AES 440 Soil Chemistry and Plant Nutrition
- 3 AES 442 Soil Taxonomy
- 3 AES 444 Soil Morphology and Mapping
- 9-11 Plus at least three from the following list:
  - AES 100 Plant Science
  - AES 105 Principles of Sustainable Agriculture
  - AES 344 Soil and Water Conservation
  - AES 449 Soil Organic Matter and Fertility
  - FTY 457 Forest Watershed Management
  - GES 109 Geology of Maine

**Sustainable Agriculture:** (20-21 credits)

- 4 AES 101 Cropping Systems
- 3 AES 105 Principles of Sustainable Agriculture
- 4 AES 140/141 Soil Science/Laboratory
- 3 REP 381 Sustainable Development Principles and Policies
- 6-9 Plus two courses from the following list:
  - AES 401 Advanced Crop Management
  - AES 403 Weed Ecology and Management
  - AES 449 Soil Organic Matter and Fertility
  - AES 479 Crop Ecology
  - INT 482 Pesticides and the Environment
  - INT 450 Design and Management of Agroecosystems
  - BIO 448 Insect Pest Ecology and Management

**Zoology:** (18 credits)

- 4 BIO 100 Basic Biology
- 4 BIO 200 Biology of Organisms
- 10 10 credits selected from the following list:
  - BMB 280 Introduction to Molecular and Cellular Biology
  - INT 219 Introduction to Ecology
  - BIO 319 General Ecology
  - Any upper-level BIO course that focuses on animal biology

**Division of Lifelong Learning**  
<http://www.ume.maine.edu/~ced/lifelongtop.hvtml>

The Division of Lifelong Learning provides experiences that enhance quality of life, empower individuals and organizations and improve professional practice. The division promotes learning as a continuous and lifelong process and provides a broad spectrum of innovative and alternative educational programs and services for the ongoing needs of primarily adult learners and organizations. Enabling educational access and equality of opportunity, the Division extends University resources to non-traditional and non-matriculating constituencies, and serves as an important linkage between the University of Maine, the people of Maine, and Maine's work force. By offering tailor-made, instructional delivery systems for external constituencies (e.g., off-campus, on-site instruction; interactive television; video conferencing; computer conferencing; and other forms of electronic instruction) the Division provides lifelong learning opportunities that reflect the University's outreach mission and land-grant heritage. Established in 1996, and composed of the Bureau of Labor Education, the Continuing Education Division, the Onward Program, the Peace Studies Program, the Summer Session and the Women's Resource Center, the Division of Lifelong Learning provides experiences that enhance quality of life, empower individuals and organizations, an improve professional practice.

Robert White, *Director*  
(207) 581-3305  
rwhite@maine.edu

Sandra Cayford, *contact person*  
(207) 581-3305  
cedss@maine.edu

**Academic Programs:**  
Bachelor of University Studies

**Division of Lifelong Learning Notes:**

*Bachelor of University Studies:*

The Bachelor of University Studies presents to the highly motivated part-time student the opportunity to coordinate the offerings of the Continuing Education Division and Summer Session into an individually planned degree program. This program is designed specifically and solely for part-time students. The program is offered for many individuals those who did not continue directly to higher education after high school and who find that family, job, and other responsibilities do not allow a full-time program of study; those who have discontinued college or university programs and who now wish to re-enter a degree program; those with associate degrees who may wish to pursue a broader based baccalaureate program. The Bachelor of University Studies is not intended to duplicate or to displace proven current programs of offerings of the University or of other schools and colleges. The degree differs in two major respects from traditional BA and BS degrees. First, it is offered only through the Continuing Education Division and only for adults who can attend the University on a part-time basis. Second, each student, in consultation with a CED advisor, will design a program leading to specific educational goals but not necessarily within any one department, division, school, or college. An advisory committee composed of representatives of each of the University's colleges approves individual plans. The program is designed to be flexible and adaptable to the needs of the individual part-time adult student. Prior to the submission of a University of Maine admission application form, prospective students must meet with an advisor of the Continuing Education Division. For an appointment or for further information call (207) 581-3142.

*Bureau of Labor Education:*

The Bureau of Labor Education, established in 1966, conducts educational rograms, presentations, and research on labor and labor related issues of interest to workers; students; leaders in government, labor, and education; and public policymakers. General topics include employment law, occupational health and safety, labor/management relations, leadership development, and labor economics. The Bureau



also analyzes and speaks on timely issues involving such topics as discrimination and sexual harassment, the Americans With Disabilities Act, productivity, workplace innovations, the global economy and competitiveness and the Family and Medical Leave Act. For more information on the Bureau, or to request a program, call (207) 581-4124. Fees, charges, and program costs are determined by arrangement.

***Continuing Education  
Division:***

The Continuing Education Division facilitates the educational aspirations of part-time, evening, weekend, on-campus and distance students who are working toward an undergraduate or graduate degree, or who are taking credit courses and/or non-credit courses for personal and professional growth. CED also coordinates the university's Winter Session in which courses are offered between the fall and spring semesters. The Division also conducts professional development certificate programs, in-house contract programs, and community programs designed to meet the educational needs of the Maine workforce or the lifelong learning pursuits of Maine citizens.

The Continuing Education Division coordinates the part-time study of non-traditional and non-degree students on the Orono campus and in a wide geographical area surrounding the Orono campus. Over 500 courses are conducted each year during the late afternoon and evening. The Division provides a source of continuing education for mature and qualified persons who wish to supplement and earlier education. Courses offered may sometimes be applied toward degree programs or may be primarily for professional or personal use. However, all programs offered are designed to prepare adults to meet the challenge to change and to provide experiences in learning which will lead to a fuller and richer life. Adult students in Continuing Education Division classes have varied backgrounds and interests. Most of them carry on full-time occupations, have graduated from high school some time ago and have determined for themselves the need for earning a degree for specific courses to be used for personal or occupational development. A number of students who are recent high school graduates are beginning their college career by enrollment in CED classes.

A large variety of degree credit courses are available on campus as well as at selected outreach centers. Courses offered might be for degree credit or non-degree credit. Academic advisors are available to advise students on course selection and registration procedures. Regular tuition rates are charged for courses offered. Adults who wish to enroll in a CED course are encouraged to visit the CED office in Chadbourne Hall, (207) 581-3306.

***Certificate Programs  
Offered through the  
Continuing Education  
Division:***

**Certificate of Postgraduate Studies in Business Administration**

The Certificate of Postgraduate Studies in Business Administration provides an understanding of the functional areas common to all business enterprises. This program furnishes the broad training necessary for successful business management in a rapidly changing environment. The certificate program consists of courses in management, production, finance, marketing, accounting, and economics.

Each applicant must have a bachelor's degree from an accredited institution and provide a transcript from each institution attended. Students must be proficient in college algebra and the use of word processing and spreadsheet software.

For an application and further information contact:

The Graduate Program Office, Maine Business School  
University of Maine  
5723 Donald P. Corbett Business Building  
Orono, Maine 04469-5723

Telephone: 207-581-1973

E-mail: HYPERLINK mail to: [MBA@maine.maine.edu](mailto:MBA@maine.maine.edu)

### **Certificate in Classical Studies**

Interested in Classics? Want to read the Great Books from Classical Antiquity? Are you interested in Learning Latin? And Mythology, and the Origin of Customs, Values, and Ideas from the Great Melting Pot of the Multicultural World of Classical Antiquity?

If these ideas are appealing to you, you may want to consider a New Program in Classical Studies offered through the Division of Lifelong Learning.

The classical period in Western history, defined as the period from the Bronze Age to the fall of the Roman Empire in the fifth century C.E., comprises the Aroots@ of modern society. In order to understand where we are and where we are going, it is necessary to know where we have been. European and American literature, philosophy, law, religion, politics, language, and art have all been directly or indirectly formed in reaction to Classical culture. By examination and study of classical civilization, the student will develop a sense of how the ancients responded to the universal questions of human experience. Through an implicit comparison of the cultures of ancient Greece and Rome to our own, the student will also come to have a fuller understanding of the humanist and cultural impulses which have formed and which continue to form our own experience.

This program is available through the Division of Lifelong Learning, Continuing Education/Summer Session. Courses will be available through a combination of distance education and evening or weekend on-site courses at the University of Maine. For more information, please contact:

Kristina Passman, Coordinator of Classical Studies Program  
Associate Professor of Classical Languages and Literatures  
Department of Modern Languages and Classics, 581-2073  
[Passman@maine.maine.edu](mailto:Passman@maine.maine.edu)

### **Certificate in Maine Studies**

The Certificate in Maine Studies offers students an opportunity to pursue a multi-disciplinary study of Maine through courses in history, literature, women's studies, economics, political science, geology, geography, and biology. The program recognizes the value of a multi-disciplinary approach to understanding historical and contemporary issues such as developing Maine's economy, protecting its environment, and appreciating the cultures of the state's diverse population.

Course will be available on the Orono campus through Continuing Education. Students may take courses as distance learners through interactive television, video conferencing, and computer conferencing and through a combination of technologies and on-campus components or field experience.

In recognition of the completion of 18 credit hours in courses offered through the Maine Studies program, the Division of Lifelong Learning will award the Certificate. The Certificate in Maine Studies program will include topics courses, cooperative education opportunities, directed study, independent study, field experience, department projects, special topics, seminars, problems courses, readings courses, workshops, and selected topics from various disciplines as well as interdisciplinary offerings. For more information, please contact:

Carol Nordstrom Toner  
Coordinator, Certificate in Maine Studies  
University of Maine  
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Orono, Maine 04469-5774  
E-mail: carol.toner@umit.maine.edu  
Telephone: 207-581-3147  
Fax: 207-581-3141

*Customized In-House  
Contract Training:*

The University of Maine provides training programs in many skill and knowledge areas for companies, institutions and organizations. These programs address specific needs in content, delivery method and timing. All instructors are professionals in their fields selected for their knowledge, teaching effectiveness and training expertise. For more information call (207) 581-3414.

*Distance Learning:*

The Continuing Education Division and Summer Session offer approximately 100 distance education courses each year through technology such as interactive television, video conferencing, teleconferencing and asynchronous modes like computer conferencing, tape delay, and World Wide Web delivery. These courses originate from a wide variety of academic departments, and they are transmitted throughout Maine and beyond its borders to national and international audiences. For more information call (207) 581-3142.

*Institutes (Non-Credit  
Continuing Education  
Course Offerings):*

The University of Maine to those who satisfactorily complete a course will award an appropriate number of Continuing Education Units (CEUs). The CEU, generally recognized throughout the country, has been adopted as a uniform means of recording, measuring, and recognizing efforts in noncredit, post-secondary education. The nationally recognized CEU is defined as ten contact hours of participation in an organized continuing education experience under responsible sponsorship, capable direction, and qualified instruction. The Continuing Education Division will maintain permanent records. An official transcript showing the course titles and the number of CEUs earned will be issued upon request. The Continuing Education Division is responsible for the administration of the CEU programs. CEUs may not be converted to degree credit. For more information call (207) 581-3414.

*Onward Program:*

The Onward Program offers academic support services to students enrolled at the University of Maine. Services include college preparatory courses in writing, mathematics, science and reading; individual and group counseling, tutoring, and services for students with disabilities. All program services are designed to assist non-traditional students, low income students and students with disabilities to achieve their educational goals. At the heart of the Onward Program is the one-to-one personal involvement and contact, especially the development of a close personal relationship between student and staff. Students who want more information about these services or who feel they could benefit from participation in these services should contact the Onward Program, 5757 Onward Building, University of Maine, Orono, ME 04469-5757. Phone: (207) 581-2319/2320.

*Counseling:*

The Onward Program counselors help students, through individual and small group counseling, to achieve their academic, vocational and personal goals. Counseling provides students with opportunities to gain information, explore values, make decisions, address concerns and resolve problems and conflicts. Counselors provide a safe, confidential atmosphere where students may discuss and explore attitudes, feelings, values, plans, life styles and problems. Individuals requiring ongoing therapy will be provided with an appropriate referral. Peer Advisors, a special group



of upper-class students, assist Counselors in providing support and orientation activities for the new students.

*Office of Services for  
Students with  
Disabilities:*

The Counselor/Coordinator of Services for Students with Disabilities facilitates the education of students with physical, emotional or learning disabilities by providing a point of coordination for special services they may need while attending the University of Maine. Some of the services provided or coordinated for disabled students are advising, special orientation to campus, readers, recorders, the ordering of taped texts, classroom relocation, priority registration, mediation and advocacy, classroom accommodations, as well as personal, educational, and vocational counseling. Students believed to be learning disabled without documentation can be screened through this office and referred for assessment outside of the University.

The Counselor/Coordinator of Services for Students with Disabilities has an office in the Onward Building and will be happy to supply further information and answer questions. Students are encouraged to contact the Counselor/Coordinator of Services for Students with Disabilities, 5757 Onward Building, University of Maine, Orono, ME 04469-5757. Phone (207) 581-2319. TTY for the Deaf (207) 581-2311.

*Tutoring:*

The Onward-Tutor Program provides tutorial services for University of Maine students who need academic assistance in most 100 and 200-level courses. Tutorial assignments are made in small groups to promote and encourage collaborative learning. By working together, students learn how to process course material and sharpen their reasoning and questioning skills. Sessions are process-oriented, learner-centered, and require the active participation of each group member.

To be eligible for services, students must be enrolled in at least six credit hours and enrolled in a degree program. Requests for tutors are accepted during the first eight weeks of the semester or until funds are exhausted, whichever comes first. Assignments are made based upon the availability of qualified tutors, funding and course demand. For further information contact the Onward Tutor Program, Student Academic Services Center, 104 Dunn Hall, 581-2351.

*Onward College  
Preparatory Courses:*

Onward Courses earn no degree credit. Grades earned are calculated into the semester grade point average. Each college determines how developmental course grades will be treated in the accumulative grade point average. Onward courses and descriptions can be found in the course description section of this catalog. Refer to index for page number.

*Peace Studies:*

The Peace Studies Program addresses critical issues of conflict, violence, social justice, and nonviolent conflict resolution, from the personal to the global level. The Program offers academic courses, a lending library, educational programs, research symposia, and summer institutes and outreach projects in conflict management. Through these various forums the Program infuses concerns for peace into the campus and community, and works with other organizations in Maine to provide information and skills for building a nonviolent society.

Peace Studies at the University of Maine focuses on research and study about basic issues confronting humankind as it approaches the twenty-first century. It deals with the problem of violence defined in psychological, economic, political and ecological terms. It seeks to understand violence and its causes, to explore short- and long-term strategies for eliminating the causes of violence and to develop skills for peaceful resolution of conflict. By encouraging individuals to act on their understanding of the causes of violence, it seeks the creation of a more peaceful society and world.

The program takes an interdisciplinary, global and international approach to: threats of force and use of force in international relations, including arms control and external involvement in civil wars, international law and organization, human rights, defined in the broadest sense, oppression of and discrimination against social groups based on gender, race, class, ethnicity and other distinctions, political oppression in general and economic exploitation of developing countries, and the deterioration of the world environment.

Through its academic concentration, lending library, lectures, conferences and other educational forums, Peace Studies infuses concerns for peace into the campus and UMaine System, and joins with the people of Maine in sharing information and skills in the pursuit of peace.

A part-time faculty director, in collaboration with a Steering Committee administers Peace Studies. Members of the Steering Committee are drawn from departments and programs across the university. Additionally four standing committees [Curriculum, Research, Public Education and Fundraising/ Development] assist in program planning and development.

Students who wish to enroll in the Peace Studies Interdisciplinary Course Concentration should contact the Peace Studies Program Office, 213 The Maples, (207) 581-2609, for further information or assistance. Enrollment is open to all undergraduate students.

**Requirements: (18 credits)**

- 3 PAX 201 Introduction to Peace Studies
- 3 PAX 410 Underpinnings of Peace: Critical Perspectives
- 3 PAX 490 Senior Capstone in Peace Studies
- 9 Electives from at least two of the three areas below\*
  - A. International Politics and Conflict
    - Asia: HTY 442 The United States and Vietnam: a History
    - Europe: HTY 409/410 20th Century Europe (1914-1945 and 1945-present)
    - HTY 411 The Holocaust
    - HTY 424 History of Russia II
    - POS 335 Major Governments of Western Europe
    - POS 336 Government and Politics in Russia and Former Soviet Territories
    - Latin America: HTY 448 Latin America: Reform and Revolution
    - POS 468 Politics of Latin America
    - Middle East/Africa: ANT 454 Cultures and Societies of the Middle East
    - HTY 446 History of Modern Middle East (1800 - Present)
    - POS 467 African Politics
    - POS 469 Politics of the Middle East
    - Other: ANT 456 Ethnic Conflict in the Modern World
    - ECO 337 Comparative Economic Systems
    - HTY 278 American Military History
    - HTY 280 Naval History
    - PHI 240 Social and Political Philosophy
    - POS 241 Introduction to Comparative Politics
    - POS 273 International Relations
    - POS 374 American Foreign Policy
    - POS 377 International Law
    - POS 475 International Security Analysis
    - POS 573 Problems in International Politics

## B. Interpersonal, Structural, and Environmental Violence

ANT 470 Religion and Politics  
 CHF 452 Violence in the Family  
 ECO 336 Marxian Economics  
 FSN 270 World Food and Nutrition  
 HON 302 Honors Tutorial Social and Behavioral Sciences-Hunger in the U.S. and the World  
 HTY 479 Environmental History  
 INT 525 Tropical Deforestation Seminar  
 NRC 100 Introduction to Natural Resources  
 PSY 339 Political Psychology  
 REP 281 World Food Demand, Population and World Food Supply  
 SOC 201 Social Inequality  
 SOC 202 Social Problems  
 SOC 208 Problems of Violence and Terrorism  
 SOC 319 Domestic Violence and Social Structure  
 SOC 329 Sociology of Gender  
 SOC 330 Perspectives on Women  
 SOC 338 Race and Ethnicity  
 SOC 347 Wealth, Power and Prestige

## C. Conflict Resolution and Social Change

AES 105 Principles of Sustainable Agriculture  
 ANT 465 Political Anthropology  
 BUA 631 Collective Bargaining  
 COM 347 Argument and Critical Thinking  
 COM 403 Persuasion and Social Influence  
 ECO 330 Humanistic Economics  
 ECO 338 Economic Development  
 HTY 496 Protest and Reform in Nineteenth-Century America  
 INT 105 Environmental Policy  
 LIB 500 Graduate Seminar in Liberal Studies-Ethics of Care  
 PHI 230 Ethics  
 PHI 335 Contemporary Ethics  
 PHI 344 Theories of Justice  
 POS 378 World Order Through International Organization and Law  
 PSY 565 Attitudes and Opinions  
 REP 381 Sustainable Development Principles and Policies  
 SOC 314 Law and Society  
 SOC 425 Sociology of Social Policy and Social Change  
 SOC 465 Evolution, Revolution, and the Future  
 WLE 480 International Conservation

o have the option of taking PAX 398 (Topics in Peace Studies) as one of their electives. Additionally, various departments offer "topics" courses relating to Peace Studies that may be counted as electives, with the Director's approval. For example, approved topics courses would include:

PHI 465-Advanced Topics in Philosophy (Democracy, Justice and the Modern State);  
 CHF 404-Selected Topics in Child Development and Family Life (Marital and Family Conflict) and (Cross-Cultural Perspective on Family Conflict);  
 ENG 129-Topics in English (American Cultural Intersections and Utopian Literature).

### Summer Session:

The Summer Session offers courses and programs to meet the needs of full-time and part-time, day, evening and weekend, on-campus and distance students during the months of May, June, July, and August. Serving degree and non-degree students, the Summer Session offers over 500 courses in three-week, five-week, six-week, and

eight-week calendars to those seeking educational experiences for personal and/or professional growth.

The Summer Session, established in 1895, is designed to meet the needs of regularly enrolled college students, educators, and those who seek cultural and professional growth in specific fields. Regularly enrolled students of the University of Maine and other collegiate institutions likewise find an opportunity to make up work they have missed during the regular school year or to secure additional credits in anticipation of individual needs. Those not engaged in formal study who desire to attend the session for general purposes may do so when prerequisites are met. Credit earned in the Summer Session is fully recognized and may be counted toward the degrees that the University of Maine confers or may be transferred to other colleges and universities.

To allow students the greatest degree of flexibility in scheduling, 7 three-week sessions, 2 five-week sessions, 2 six-week sessions and 3 eight-week evening sessions are scheduled between mid May and the end of August.

The Summer Session Office is located in 122 Chadbourne Hall, (207) 581-3142. Students who are not matriculated in one of the colleges of the University may receive academic advising in the Summer Session Office for planning their educational programs.

#### *Winter Session*

Winter session, late December and early January, the time between the end of the Fall Semester and the beginning of Spring Semester provides students with opportunities to accelerate programs of study; explore new and exciting academic options; or enjoy a two-week study abroad venture. For extremely bright and motivated students looking toward innovative interdisciplinary opportunities; students wishing to improve their grade point averages; high-risk students; athletes needing another course for eligibility; or international students finding themselves on campus anyway, Winter Session is an appealing option. Through this intense academic experience, students may focus on a major area or explore novel interests through a variety of creative and experimental offerings.

Students who take part in Winter Session and May term for four years could eliminate an entire academic year of study or graduate in December instead of May, thus accelerating their program of study significantly. Students' fall or spring academic loads can be lightened through participation in Winter Session, a particularly helpful option if they have scheduled difficult courses requiring extra time and effort.

The University of Maine is interested in and committed to multicultural diversity. Winter Session supports this commitment while working with colleges and departments to provide study abroad opportunities for students studying abroad for an abbreviated period of time rather than an entire semester allows students to gain culture understanding with much less expense and schedule adjustment.

#### *Women's Resource Center:*

For students receiving financial aid, Winter Session counts toward the spring semester award. For more information call (207) 581-3142.

The Women's Resource Center provides educational and cultural opportunities that further women's personal and professional development, and promotes a broader understanding of the diverse experiences of all women. The Women's Resource Center provides linkage with women and women's organizations throughout the state. The Women's Resource Center, located at 101 Fernald Hall, was established in

the fall of 1991 to promote and maintain an inclusive, positive and supportive climate conducive to women's personal and professional development at the University of Maine. The Center, which comes under the Division of Lifelong Learning arm of the University, serves as a resource for individuals and organizations, offering information and referrals for women's programs and services on and off campus, providing advocacy and collaboration to help women with special needs and concerns, and bringing together women with similar values and goals.

The Women's Resource Center employs work-study students who contribute to the work of the office as well as develop projects that reflect their interests and skills. The staff and students of the Women's Resource Center work closely with the Student Women's Association, a student run organization that advocates women's rights, sponsors educational programs, and provides a positive and supportive environment conducive to personal expression.

The Women's Resource Center promotes a closer relationship between the women on the University of Maine campus and women in the larger Maine community, reaching out to women's programs and initiatives and providing support and guidance, including mentoring opportunities with women activists and gender equity programs for girls in area high schools. In addition to an extensive collection of book, periodicals, and videos of interest to women, the Center offers programs, provides meeting space, produces and distributes a calendar of events by and about women and promotes within the University community a broader understanding of the diverse experiences of all women. For more information call (207) 581-1508.