

## College of Natural Sciences, Forestry & Agriculture

### Contact

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### Admission Requirements

(In years as established by the college)

A high school diploma with the following specific courses:

- 4 English
- 2 Algebra I & II
- 1 Geometry
- 3 Lab Science
- 2 History/Social Studies
- 2 Foreign Language (*same language or two years of American Sign Language-ASL for B.A. degree only*)
- 1 Computer Science
- 1 Fine Arts
- Academic electives (*to equal at least 17 total credits*)

*To ensure current mathematical skills, students should take a mathematics course during their senior year of high school.*

### Major Requirements

#### Bachelor of Arts

- 37 credits Earth Sciences
- 15 credits Ancillary Sciences & Mathematics
- 3 credits College Composition
- 27 credits Humanities & Social Sciences

#### Bachelor of Science

- 44 credits Earth Sciences
- 30 credits Ancillary Sciences & Mathematics
- 3 credits College Composition
- 6 credits Humanities & Social Sciences (*upper level*)

*120 Minimum total credit hours required for graduation*

### Program Description

The earth sciences are concerned with the physical and chemical characteristics of minerals and rocks, deep-Earth structures and processes, and the record of these systems exposed at the surface, surficial environments and landforms, the history of Earth and its inhabitants, and our physical and chemical environment. Recent advances in understanding of global changes in climate and ecosystems require understanding of earth sciences. The curriculum provides a basic understanding of earth and environmental sciences, and is sufficiently flexible to allow students with interests in geoarchaeology, geochemistry, geophysics, and marine geology to pursue additional courses in appropriate ancillary sciences.

The state of Maine is an excellent place in which to teach and learn geology. It is a part of the ancient Appalachian Mountains and provides opportunities to study all aspects of bedrock geology. In addition, the Maine coast and Maine's extensive glacial deposits provide excellent opportunities for field experiences in marine and glacial geology. Many graduate and undergraduate students work with Earth Science faculty, many of whom are also associated with the Climate Change Institute. UMaine research on climate change began more than 30 years ago and continues to grow with projects in the U.S. (including Alaska), Antarctica, Greenland, New Zealand, Argentina, Ireland, and Peru.

The Department of Earth Sciences at UMaine, one of the National Science Foundation's "Top 100 Geoscience Departments," has one of the largest, most diverse geology faculties in northern New England. The faculty members are very active professionally and, or; jointly have a national and international reputation for excellence, therefore, are well known by colleagues throughout North America. The faculty teaches from first hand experience, and, when appropriate, this offers research and travel opportunities for undergraduate and graduate students.

Participation in an internship experience is one way for Earth Sciences students to expand their knowledge base. Recent internships included mapping coastal hazards along the Maine coast by kayak, coring coastal salt marshes, and prospecting for minerals in Maine's North Woods, Geological Survey; Intern.

### Career Opportunities

An Earth Sciences major is prepared to directly enter industry, government agencies, or graduate school. With the addition of specific electives, the requirements for medical or dental school are met. Entry positions held by graduates of the Earth Sciences program are: Environmental Scientist, Applied Environmental Technologies; Nautical Mapping, National Ocean and Atmospheric Association; Engineer/Geologist, Geotechnical Engineers, Inc.; Geologist, Morrison Geotechnical Engineering; Senior Hydrogeologist, Johnson Company; Seismic Field Technician, FM Beck; Cartographer, James Sewall; Environmental Specialist, Department of Environmental Protection; Geologist, Briggs Associates, Inc.; Geotechnical Lab Supervisor, E.C. Jordan; Geologist, Chevron USA.

### General Education Requirements\*

- ENG 101 College Composition
- 18 credits Human Values & Social Context area (*a single course may satisfy more than 1 sub-category, but a total of 18 credits must be completed*)
  - Western Cultural Tradition
  - Social Context & Institutions
  - Cultural Diversity & International Perspectives
  - Population & the Environment
  - Artistic & Creative Expression

## **General Education Requirements\* (continued)**

- 2 courses Designated Writing Intensive (*1 must be within the major*)
- 2 courses Biological or Physical Sciences (*must include at least 1 laboratory course*)
- 1 course Ethics (*emphasis on discussion of ethical issues in 1 course or series of courses*)
- 6 credits Mathematics (*including statistics & some computer science, only 3 credits in computer science can count toward this requirement*)
- 1 capstone An approved experience in which the student integrates the components of his or her undergraduate training to perform at a professional level. The capstone experience is usually completed during the senior year in consultation with the student's academic advisor.

*\*All UMaine students must complete these general education requirements, which are counted in the total credit hours required for graduation and may be contained in the Major Requirements previously listed.*

## **Specialized Information**

The Department of Earth Sciences offers a minor in Earth Sciences. The minor is open to all undergraduate, degree-seeking University of Maine students and requires the completion of at least 18 credit hours in Earth Sciences courses. At least 10 credit hours must be at the upper level.

## **Graduate Study**

The University of Maine offers a Master of Science degree and a Doctor of Philosophy degree in Earth Sciences. The advanced degrees are administered through the Department of Earth Sciences and the Graduate School.

Required and elective courses in Earth Sciences exist in coastal and marine geology, groundwater geology and groundwater modeling, sedimentology, stratigraphy, igneous and metamorphic petrology, glacial geology, structural geology, mineralogy, geochemistry, geophysics, glaciology, and isotope geology.

### **Academic Programs 2008-2009**

Please refer to the web site (<http://factsheets.umaine.edu/>) for the most updated version of the fact sheets.

This fact sheet is intended for informational purposes only and is subject to change.