

**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
- 2 Lab Science (*including chemistry or physics*)
- 2 History/Social Studies
- 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**

- 33 credits Biochemistry, Microbiology & Molecular Biology
- 3 credits College Composition
- 18 credits Humanities & Social Sciences
- 56 credits Sciences & Mathematics
- 10 credits Electives

*120 Minimum total credit hours required for graduation*

**Program Description**

Biochemistry is concerned with the study of all living systems at the cellular and molecular levels and is, therefore, fundamental to life sciences. The field is broad in its disciplinary subjects and applications. It emphasizes the use of chemistry and other physical sciences to understand basic life processes and the products of such processes. In addition to traditional study of the structure and function of biological molecules and understanding metabolism, the field has come to encompass aspects of molecular biology, molecular genetics and many areas of biotechnology. It forms a major component of modern medical research and practice, bioengineering, and contemporary environmental and agricultural research.

Students have the opportunity to participate in internships. Some recently held internships include: Lab Assistant, State of Maine Public Health Lab; Lab Field Assistant, Acheron Engineering; Research Intern, Proctor and Gamble; Research Intern, McNeil Pharmaceutical; Summer Research Participant, Argonne National Laboratory.

**Career Opportunities**

Graduates in Biochemistry have a wide range of career opportunities in the chemical and pharmaceutical industries and in the health professions. Many graduates pursue advanced degrees in medicine or in science, leading to careers as physicians or research scientists. The new and expanding field of biotechnology presents many exciting opportunities, ranging from laboratory technician to corporate officer to individual entrepreneur.

**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
- 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 Biochemistry, Microbiology, and Molecular Biology offers a minor in Biochemistry. The minor is open to all undergraduate, degree-seeking University of Maine students and requires the completion of 18 credit hours in Biochemistry courses.

*A Member of the University of Maine System*

## **Graduate Study**

The University of Maine offers the Master of Science and Master of Professional Studies degrees in Biochemistry and the Doctor of Philosophy in Biochemistry and Molecular Biology. The degrees are administered by the Department of Biochemistry, Microbiology and Molecular Biology.

### **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.