Biochemistry & Molecular Biology

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Program Description

Emphasizing independent research and one-on-one collaboration with faculty members, Gettysburg's interdisciplinary biochemistry-molecular biology major requires study in the biology, chemistry, mathematics, and physics departments, consistent with recommendations of the American Society of Biochemistry and Molecular Biology.

Students gain hands-on experience with state-of-the-art biochemical analysis and recombinant DNA technology as they examine the structures and chemical reactions within living cells. A capstone research project frequently results in professional publications co-authored by students and professors or presentations at scientific meetings.

Students receive excellent preparation for graduate study, medical school, or careers in a broad range of fields.

Program Requirements

Requirements

Students may earn a B.S. degree in biochemistry and molecular biology by completing the following requirements:

- Biology 111 Introduction to Ecology and Evolution (or Biology 113)
- Biology 112 Form and Function of Living Organisms
- Biology 211 Genetics
- Biology 212 Cell Biology
- Biology 351* Molecular Genetics
- Chemistry 105 Fundamental Chemistry: Down on the Farm or Chemistry 107 Chemical Structure and Bonding
- Chemistry 108 Chemical Reactivity
- Chemistry 203 Organic Chemistry
- Chemistry 204 Organic Chemistry
- Chemistry 305 Physical Chemistry
- Chemistry 333 Biochemistry I

- Chemistry (or Biology) 334* Biochemistry II
- Mathematics 111 Calculus I
- Mathematics 112 Calculus II
- Physics 109 Introductory Physics I
- Physics 110 Introductory Physics II

In addition, students must complete any two of the following courses:

- Biology 251 Introduction to Bioinformatics
- Biology 320* Developmental Biology
- Biology 332 Immunobiology
- Biology 335 Neurobiology
- Biology 390 Ecology, Evolution, and Molecular Biology of Viruses
- Chemistry 317 Instrumental Analysis
- Chemistry 375 Advanced Inorganic
- Chemistry Research* (Biology 460 or 461 or Chemistry 460 or 465)

*Biology 320, Biology 351, Biology/Chemistry 334, Biology 460, Biology 461, Chemistry 460, and Chemistry 465 have components that fulfill the capstone experience for the biochemistry and molecular biology major.

The program is directed by a Biochemistry and Molecular Biology Committee (BMBC), consisting of biology and chemistry faculty members.

Individualized Study projects (Biology 460, Biology 461, Chemistry 460, or Chemistry 465) may be directed by any BMBC member. Otherwise, the project requires the approval of the BMBC.

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