

Biological Chemistry

AN INTERDEPARTMENTAL MAJOR

Director: *Allen (Biological Sciences)*

Biological Chemistry Advisory Committee: *Allen (Biological Sciences), Elmore (Chemistry), Hood-Degrenier (Biological Sciences), Peterman (Biological Sciences), Vardar Ulu (Chemistry), Wolfson (Chemistry)*

Biological Chemistry is an interdisciplinary major offered by the Departments of Biological Sciences and Chemistry, allowing students to explore the chemistry of biological systems. Biological Chemistry includes fields we call biochemistry, cell and molecular biology, as well as other molecular aspects of the life sciences. It deals with the structure, function and regulation of cellular components and biologically active molecules, such as proteins, carbohydrates, lipids, and nucleic acids. Expertise in biological chemistry is central to breakthroughs in DNA technology, drug discovery and design, and molecular approaches to disease.

In addition to two courses in biochemistry (CHEM 221 and 328), the major must include the following courses: CHEM (a) both 105 and 205, or 120; (b) 211; (c) 232; BISC (a) 110 or 110DL; (b) 219; (c) 220; (d) two 300-level courses from among the following: 303, 309, 310, 313, 316, 319, 320 or a seminar course if relevant to the major and approved by the director, excluding 350, 360, 370. At least one of these two 300-level courses must be a laboratory course; PHYS 104 or 107; MATH 116, 116Z, 120 or equivalent. For students who enter the College in the fall of 2008 or later, BIOC 240 will be required for the major. For students who entered the College prior to the fall of 2008, BIOC 240 is strongly recommended.

Students should be sure to satisfy the prerequisites for the 300-level courses in biological sciences and chemistry. Students planning graduate work in biochemistry should consider taking additional courses in chemistry, such as analytical, inorganic, and the second semesters of organic and physical chemistry. Students planning graduate work in molecular or cell biology should consider taking additional advanced biological sciences courses in those areas. Independent research (350 and/or 360/370) is highly recommended, especially for those considering graduate study.

A recommended sequence of required courses would be:

Year I, CHEM 105 and math or physics; CHEM 205 and BISC 110

Year II, CHEM 211 and BISC 219; BISC 220 and math or physics

Year III, CHEM 221 and math; CHEM 328 and 232

Year IV, 300-level biological sciences courses and independent study

Please discuss your program with the director as soon as possible.

BIOC 250, 250H, 350, 360 and 370 research can be advised by any faculty member of the Departments of Biological Sciences or Chemistry. Advisors for honors work can be members of either department and students should enroll in BIOC 360/370 after approval by the Advisory Committee. The honors program will follow the guidelines of the appropriate department, but each honors candidate must be approved by the Biological Chemistry Advisory Committee.

BIOC 240 Seminar in Biological Chemistry for Newly-Declared Majors

Staff

A seminar for newly declared majors, to be taken in the spring of their sophomore or junior year. Students will read and discuss papers related to the research of prominent scientists working in the fields of biological chemistry and molecular biology and attend seminars in which those researchers will present their work at Wellesley. Some seminars may be scheduled outside of the normal class meeting time. *Mandatory credit/noncredit.*

Prerequisite: Limited to sophomore or junior Biological Chemistry majors or by permission of instructor

Distribution: Natural and Physical Science

Semester: Spring Unit: 0.5

BIOC 250 Research or Individual Study

Prerequisite: By permission of the instructor.

Distribution: None

Semester: Fall, Spring Unit: 1.0

BIOC 250H Research or Individual Study

Prerequisite: By permission of the instructor.

Distribution: None

Semester: Fall, Spring Unit: 0.5

BIOC 350 Research or Individual Study

Prerequisite: Open by permission to juniors and seniors.

Distribution: None

Semester: Fall, Spring Unit: 1.0

BIOC 360 Senior Thesis Research

Prerequisite: By permission of the Advisory Committee. See Academic Distinctions.

Distribution: None

Semester: Fall, Spring Unit: 1.0

BIOC 370 Senior Thesis

Prerequisite: 360 and permission of the Advisory Committee.

Distribution: None

Semester: Fall, Spring Unit: 1.0