Biochemistry (PhD)

Graduate study in biochemistry is offered in a wide range of areas including mechanisms of drug action; genetics of human disease; metabolic compartmentalization and regulation; structure and function of enzymes, toxins, viruses, ion channels, and receptors; mechanism and regulation of cellular processes; enzymology of DNA repair and replication, transcription, and translation; and computational biology. Additional details are available on the program website and from the graduate advisor.

Graduate Handbook

Graduate handbook information is updated and maintained by each program. Graduate handbooks are available within each program's office and online. Please contact the program with concerns or questions.

Admission

Students seeking a graduate degree in biochemistry must have a bachelor's degree or the equivalent in a related area, such as chemistry, biology, physics, or microbiology with the following preparation: mathematics through one year of calculus; chemistry, including organic chemistry, biochemistry, and physical chemistry; general physics; and biology, including cell biology. Deficiencies in undergraduate courses, if not too extensive, may be corrected during the student's first two semesters in the graduate program. These courses are usually not counted toward graduate degrees.

Total Hours Required: 30

Requirements

Code	Title	Hours
BCH 190C	Topics in Biochemistry (any topic) (with a grade of at least B)	1
BCH 290C	Topics in Biochemistry (any topic) (with a grade of at least B)	2
BCH 395G	Structure and Function of Proteins and Membranes (with a grade of at least B)	3
BCH 395J	Genes, Genomes, and Gene Expression (with a grade of at least B)	3
MOL 391	Grant Writing and Presentation Skills (with a grade of at least B)	3
Hours chosen from:		6
Graduate level science courses in biochemistry, chemistry, medicinal chemistry, microbiology, physics, or related fields		
BCH 999W	Dissertation	9
Free electives: Additional coursework to reach total hours required.		3
All students must also follow the requirements and policies below:		
Graduate Natural Sciences Requirements		
Graduate University Requirements		
Total Hours		**30**

Additional Requirements

Upper-level undergraduate science courses in areas outside of biochemistry may be used as electives, if appropriate for the student's scientific development, with the approval of the graduate advisor.

A qualifying examination designed to test the student's knowledge of the basic principles of biochemistry must be completed by the spring or summer of the second year. A major part of this examination consists of a research proposal written in the form used for a National Institutes of Health grant application. Students present and defend this proposal orally and are examined in terms of their ability to do independent research.

After the requirements for admission to candidacy have been completed, the chair of the Graduate Studies Committee petitions the vice provost for graduate and postdoctoral studies to appoint a dissertation committee. A student must do dissertation research under the supervision of a member of the Graduate Studies Committee. Generally this faculty member, chosen by mutual consent of the student and the professor, serves as chair of the dissertation committee.