

Requirements for the Ph. D. in Biochemistry & Biophysics

Candidates for the Ph.D. must satisfy the requirements of the graduate program committee (GPC) as stated in the Graduate Program in Biochemistry and Biophysics handbook. In brief, entering students must either complete the Molecular Biochemistry course (BCBP 4760) or have had the equivalent as part of their previous education. In their first year, students must pass the year-long Biology Core Course (with a B or better). The Core Course also serves as a qualifying exam. In addition, students must complete graduate (6000 level) versions of three 4-credit BCBP module courses (with a B or better).

Entering students must undertake three research rotations during the first year of study. These research rotations must be carried out with faculty members selected from the list of participating faculty. Two of the three faculty members selected to direct these research rotations must be based in different departments. After completing two research rotations, a thesis adviser must be chosen from the list of participating faculty by the end of the second semester. A seminar must be presented, and a candidacy exam completed, by the end of the second year of study.

To graduate with a PhD, the degree candidate must submit a dissertation based on an original research project. The GPC requires a high level of performance in courses and research, and the progress of all students is evaluated yearly. Additionally, all doctoral candidates are required to participate in teaching for at least one academic year under the supervision of a faculty member. The student thus gains experience teaching should he or she select an academic career. Seventy-two credit hours are required for the Ph.D.

*Molecular Biophysics Modules include: BCBP 4600, BCBP 6310, 6550, 6660, 6800, 6870

Outcomes of the Graduate Curriculum

- Students who successfully complete this program will be able to:
 - explain general principles and concepts from a variety of sub-disciplines within the broader fields of biochemistry and biophysics.
 - demonstrate expert knowledge of a specialized fields of biochemistry and biophysics and be able to ask and answer challenging questions in that field.
 - critically analyze and interpret the scientific literature and scientific presentations.
 - independently design, prepare, and execute experiments, using appropriate research techniques.
 - critically interpret research data and evaluate findings using appropriate statistical analyses.
 - independently design and execute a research strategy aimed towards answering a pressing scientific question in the field.

- effectively communicate their scientific research and findings in a variety of written and oral formats, including the ability to prepare a manuscript of original research for publication in a peer-reviewed scientific journal.
- discuss issues related to scientific ethics and scientific misconduct and apply ethical standards to their research and professional conduct.