

BCB

Biochemistry and Cell Biology

BCB 551: Introduction to Research in Biochemistry and Cell Biology

A series of talks, discussions, and practical exercises to address topics related to research in biochemistry and cell biology including laboratory etiquette, the laboratory notebook, experimental design, critical evaluation of the literature, analysis and presentation of data, ethical issues, and basic experimental techniques used in biochemistry and cell biology.

Prerequisites: Matriculation in MS program or permission of instructor

Fall, 2 credits, Letter graded (A, A-, B+, etc.)

BCB 552: Advanced Laboratory Methods in Biochemistry and Cell Biology

This course introduces theoretical principles and experimental techniques used to investigate the properties of biological molecules and their interactions. Students will familiarize themselves with the instrumentation and techniques used to investigate different biochemical and cell biological problems through a combination of lectures and demonstrations. Various topics will be covered such as protein purification and characterization using spectroscopic and thermodynamic techniques as well as gel electrophoresis and immunoblotting; identification of metabolites by mass spectrometry; bioinformatics analysis of DNA deep sequencing data; electron and fluorescence microscopy and the use of zebrafish and nematodes to understand biological processes.

3 credits, Letter graded (A, A-, B+, etc.)

BCB 559: MS Research Practicum in Biochemistry and Cell Biology

The student will be introduced to modern biochemical and cell biological research techniques through participation in ongoing research in the laboratory of a Biochemistry and Cell Biology or associated faculty member for one semester. Student must obtain permission to register from the sponsoring faculty member.

Prerequisite: Matriculation in MS program or permission of instructor

Fall, Spring, and Summer, 0-4 credits, S/U grading

May be repeated for credit.

BCB 599: MS Thesis Research in Biochemistry and Cell Biology

Thesis research will be conducted in the laboratory of a Biochemistry and Cell Biology or associated faculty member, including potentially an internship under the guidance of an approved mentor in the laboratory of a local biotechnology company. Student must identify and obtain permission to register from the sponsoring faculty member. Prerequisite: Matriculation in MS program or permission of instructor Offered

Fall, Spring, and Summer, 3-6 credits, S/U grading