**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 such as laboratory etiquette, the laboratory notebook: practical and legal aspects; experimental design; critical evaluation of the literature; analysis and presentation of data; and experimental techniques used in biochemistry and cell biology.

*Prerequisite: 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**

Introduces the details of theoretical principles and experimental techniques used to investigate the properties and interaction of biological molecules. Students will familiarize themselves with the instrumentation and techniques used to investigate different biochemical and cell biological problems through a combination of lectures, demonstrations, and/or laboratory work. Various topics will be covered such as cell culture and manipulation; protein purification and characterization using electrophoric, spectroscopic and thermodynamic techniques; the identification of proteins by mass spectrometry; nucleic acid purification and the utilization of PEF and microarray technologies; and modern microscope methods for investigating cellular function.

*Prerequisite: Matriculation in MS program or permission of instructor*

*Fall, 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, 4 credits, S/U grading*

**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*

*Fall, 1-9 credits, S/U grading*