Fall

16:695:538  Fundamentals of Molecular Biosciences  
6 credits  
Tuesday, Wednesday, Thursday 10 a.m. to noon

Foundational material necessary for graduate students to become fluent in the language of modern molecular and cellular biology, genetics and biochemistry in order to engage in experimentally based discovery. Through textbook and supplemental readings, instructor led lecture and discussion, students will establish the foundational knowledge base on which to build critical reasoning skills and identify open questions in molecular biosciences.

16:695:539  Experimental Methods in Molecular Biosciences  
2 credits  
Friday, 10 a.m. to noon

Emphasizes experimental methodologies underlying foundational concepts in molecular biosciences. Through reading and discussion of a range of primary papers, students will become familiar with essential experimental approaches, as well as the importance of proper controls, data interpretation and quantitative methods to address problems in molecular biosciences.

16:695:551  Essential Skills I  
1 credit  
Monday, 10 – 11 a.m. (10 a.m. to noon for first four weeks)

Presents students with basic skills needed in a biological research setting. Topics range from expectations for graduate school and managing student-advisor relationships, to basic laboratory calculations, hands-on use of tools for communicating science and applications of basic statistics. Students will be introduced to tools for management of the scientific literature, including database searching for relevant papers, and how to cite references properly. Students will engage in hands on use of presentation software and bioinformatics tools. Funding opportunities and grant writing will be introduced to students, so they will be better prepared for future opportunities to submit their own fellowship applications.

16:695:615  Laboratory Rotations  
4 credits  
by arrangement

Total credits for fall semester: 13 credits
Spring

16:695:621-638  Mini-Courses in Molecular Biosciences
1 credit each; select 6 for a total of 6 credits
*each class meets for 1.5 hours twice per week; days and times vary*

Students will select from a collection of short courses, each spanning a period of four weeks. Two courses will be taken simultaneously in three blocks, for a total of six one-credit courses. Courses are designed to engage students in reading, analyzing and discussing the literature, giving oral or written presentations, or carrying out independent or group projects that require active participation on the part of the student. Topics will be methods-based and/or discovery-based and will cover the broad range of interests reflected by the faculty in the programs in molecular biosciences.

16:695:552  Essential Skills II
1 credit
Wednesday, 11 a.m. – 12 noon

Continuation of Essential Skills I

16:115:556  Ethical Scientific Conduct
1 credit
Monday, 4 p.m. to 5 p.m.

Discusses the definitions of and ethical problems caused by fabrication of data, falsification of results, plagiarism, and other behaviors inconsistent with ethical scientific conduct.

16:695:616  Laboratory Rotations
2 credits
by arrangement

*Total credits for spring semester: 10 credits*
*Students are permitted to take electives if desired*