BIOL 109: Life: Introduction to Modern Biology

This detailed course description provides information about course topics & content. It is not a course syllabus. Summer 2013 course syllabi are updated in the spring, and may not be available until summer classes begin.

Instructor Information

Instructor	Email	Course Format	Number of Credits
Steven Caruso	scaruso@umbc.edu	Lecture, Lab	3

General Information

Course Format Other

The course includes a 75-minute lecture and 180-minute lab.

Delivery Format

In-Person

Prerequisite /Co-requisite: NA

Course Materials

Currently Used Materials

• Course specific lab manual

Course Objectives/Learning Outcomes:

BIOL 109 is designed to fulfill the universities graduation requirement of a science with a lab for non-science majors, and is a lab driven course with a 75-minute lecture to provide background material and a three hour lab to provide students with a hands-on science experience. The course material is flexible, and responds to events in the news; but students are expected to leave with basic biological concepts such as the nature and function of DNA, the basic rules of heredity, the process of mutation and its role in selection, forensic analysis of DNA, the role of genes and disease, and other such concepts. However, the focus of the course is more aimed at providing students an interesting experience in the process of experimental science and with developing an enthusiasm for biology than with the volume of information they can memorize. When BIOL 109 is succeeds, students will increase not only the level of appreciation of science and research, but also to impart a degree of critical thinking and incredulity. Students who pass BIOL 109 to feel comfortable reading popular magazines about science issues, and read news stories without accepting them at face value. BIOL 109 uses hands-on activities to build excitement and enthusiasm for science in general and biology and research in particular.

Minimum learning goals, students should leave understanding:

1. The scientific method
2. Basic DNA structure
3. The central dogma of molecular biology
4. Basic cell structure

5. Basic Mendelian inheritance
6. The relationship between mutations and evolution
7. The need to critically analyze scientific claims in adds, news stories, etc.
8. Science can be exciting, rewarding, and fun

Potential Topics Covered:

This is a lab-driven course designed to fulfill the university graduation requirement of a science lab. Topics covered will include basic biological concepts such as the nature of DNA, heredity, human genetics and the process of mutation, as well as modern issues such as forensic analysis of DNA and blood, the biology behind cancer and genetic diseases, and others as determined by current events and interest.