**BIO**

**Biology**

**BIO 511: Topics in Biotechnology**
An introduction to the field of biotechnology. The course will survey the history of the development of genetic engineering, methodologies used in biotechnology, applications of biotechnology in medicine, agriculture and manufacturing, and the implications of these technologies for society. Intended for the students in the MAT Science and MALS programs. This course has an associated fee. Please see www.stonybrook.edu/course fees for more information.

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

**BIO 515: Current Topics in Microbiology**
A survey of microbiology with an emphasis on microbial ecology, the role of microbes in the biosphere and the methodology used to explore these areas. The course is organized around two resources available online: Unseen Life on Earth: An Introduction to Microbiology, which was produced by The American Society for Microbiology (http://www.learner.org/resources/series121.html) and the New York State core curriculum for The Living Environment (http://www.p12.nysed.gov/ciai/mst/sci/ls.html). Intended for the students in the MAT Science and MALS programs.

This course has an associated fee. Please see www.stonybrook.edu/course fees for more information.

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

**BIO 520: Topics in Genetics**
A survey of genetics organized around a particular topic, including gene regulation, developmental genetics, cancer genetics, epigenetics with emphasis on areas with emerging new insight. The methodology used to study these areas will also be explored.

Intended for students in the MAT Biology and PhD Science Education programs.

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

**BIO 521: Laboratory Science Curriculum Development**
Development of curriculum materials appropriate for a secondary school biology classroom. Students may take this course in their second semester of the Master of Arts in Teaching Science program.

Offered Fall and Spring, 1-6 credits, Letter graded (A, A-, B+, etc.)

May be repeated for credit.

**BIO 542: Model Systems for the Living Environment**
Introduction to microbial model systems used in biological research such as yeast, nematodes and slime molds. Particular attention will be given to using these systems in the classroom to illustrate key concepts in introductory biology. Students will read and discuss research papers selected from the current scientific literature. Topics to be covered include: life cycle, laboratory techniques and design of inquiry-based investigations.

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

**BIO 558: Biological Basis of Human Evolution and Behavior**
A exploration of biological theories of human evolution, properties, and behavior. We build an understanding of evolution of complex organisms by natural selection, followed by the emergence of humans as a uniquely complex species. Scientific hypothesis formation and testing using the extensive multidisciplinary empirical record of the 1.8 million years of human history is developed throughout. Implications of human evolutionary biology for contemporary social and sexual behavior are also investigated.

This course is co-scheduled with BIO 558.

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

May be repeated for credit.

**BIO 600: Practicum in Teaching**
Fall and Spring, S/U grading

May be repeated for credit.

**BIO 601: Practicum in Teaching**
Fall and Spring, 1-3 credits, S/U grading

May be repeated for credit.