BIOLOGICAL SCIENCES (BIOL_SCI)

BIOL_SCI 302-0 Fundamentals of Neurobiology (1 Unit)
Cellular and biochemical approaches to the nervous system, focusing on neuron structure and function. May not receive credit for both BIOL_SCI 302-0 and NEUROSCI 202-0.
Prerequisites: BIOL_SCI 215-0, BIOL_SCI 219-0, and (BIOL_SCI 301-0 or the former BIOL_SCI 308-0).

BIOL_SCI 305-0 Neurobiology Laboratory (1 Unit)
Hands-on experience in the performance of experiments in cellular neurophysiology.
Prerequisites: BIOL_SCI 222-0; BIOL_SCI 302-0 or NEUROSCI 311-0.

BIOL_SCI 315-0 Advanced Cell Biology (1 Unit)
Relationship of shape, structural dynamics, and function with the cellular state and gene expression; cell-to-cell communication.
Prerequisites: BIOL_SCI 215-0, BIOL_SCI 219-0; BIOL_SCI 301-0 or the former BIOL_SCI 308-0.

BIOL_SCI 323-0 Bioinformatics: Sequence and Structure Analysis (1 Unit)
Use of informational and modeling techniques to explore evolutionary and other problems related to the genome.
Prerequisite: BIOL_SCI 241-0, BIOL_SCI 301-0, or the former BIOL_SCI 308-0.

BIOL_SCI 327-0 Biology of Aging (1 Unit)
Biological aspects of aging, from molecular to evolutionary.
Prerequisite: BIOL_SCI 219-0.

BIOL_SCI 341-0 Population Genetics (1 Unit)
Processes that affect allele frequency change and thus cause evolution.
Prerequisites: BIOL_SCI 215-0, BIOL_SCI 219-0; a course in statistics.

BIOL_SCI 345-0 Topics in Biology (1 Unit)
Topics vary but always deal with an area of advanced study in the life sciences. With laboratory. May be repeated for credit with different topic.
Prerequisites: BIOL_SCI 215-0, BIOL_SCI 219-0, BIOL_SCI 222-0.

BIOL_SCI 346-0 Field Ecology (1 Unit)
An intensive experience in field ecological research.
Prerequisites: BIOL_SCI 215-0; a course in statistics.

BIOL_SCI 347-0 Conservation Biology (1 Unit)
Evolution, ecology, and conservation of patterns of biological diversity.
Prerequisites: BIOL_SCI 215-0 or ENVR_SCI 202-0; a course in statistics.

BIOL_SCI 354-0 Quantitative Analysis of Biology (1 Unit)
Random genetic processes, gene expression, cell adaptation, cell cycle, developmental morphogens, phylogenomics.
Prerequisite: BIOL_SCI 215-0 or BIOL_SCI 219-0.

Natural Sciences Distro Area

BIOL_SCI 355-0 Immunobiology (1 Unit)
Nature of host resistance; characteristics of antigens, antibodies; basis of immune response; hypersensitivity.
Prerequisites: BIOL_SCI 215-0, BIOL_SCI 219-0, BIOL_SCI 222-0; BIOL_SCI 301-0 or the former BIOL_SCI 308-0.

BIOL_SCI 356-0 Endocrinology (1 Unit)
Physiology and biochemistry of hormones and glands of internal secretion in vertebrates; endocrine glands.
Prerequisite: BIOL_SCI 325-0.

BIOL_SCI 358-0 Advanced Physiology Laboratory (1 Unit)

Experiments in several physiological systems. Design, techniques, data analysis, and report writing emphasized.
Prerequisites: BIOL_SCI 217-0, BIOL_SCI 222-0.

BIOL_SCI 361-0 Protein Structure and Function (1 Unit)
Structure and function of proteins; x-ray crystallography and NMR.
Prerequisite: BIOL_SCI 301-0 or the former BIOL_SCI 308-0.

BIOL_SCI 378-0 Functional Genomics (1 Unit)
Patterns of gene expression and their causes.
Prerequisites: BIOL_SCI 215-0, BIOL_SCI 219-0; a course in statistics.

BIOL_SCI 390-0 Advanced Molecular Biology (1 Unit)
Nucleic acid structure; DNA mutation, repair, recombination, replication, restriction, and modification; translation.
Prerequisites: BIOL_SCI 215-0, BIOL_SCI 219-0, and (BIOL_SCI 301-0 or the former BIOL_SCI 308-0).

BIOL_SCI 391-0 Development and Evolution of Body Plans (1 Unit)
Molecular mechanisms underlying early embryonic development, including establishment of the body and organogenesis. Discussion of original literature.
Prerequisites: BIOL_SCI 215-0, BIOL_SCI 219-0, BIOL_SCI 301-0 or the former BIOL_SCI 308-0.

BIOL_SCI 395-0 Molecular Genetics (1 Unit)
Exploration of recent advances that have revolutionized the fields of gene expression and cell regulation. Discussion of articles and primary research papers.
Prerequisite: BIOL_SCI 378-0, BIOL_SCI 390-0, or BIOL_SCI 393-0.

BIOL_SCI 397-0 Molecular Biology (1 Unit)
Random genetic processes, gene expression, cell adaptation, cell cycle, developmental morphogens, phylogenomics.