BIO 4418 NEUROBIOLOGY (5) Prerequisite: BIO 4415. This course focuses on the neurosciences, emphasizing fundamental concepts and comparative aspects of nervous system structure and function. Laboratory work involves use of invertebrate models to examine the cellular basis of behavior, including neuromorphology, electrophysiology, and transmitter chemistry. Includes laboratory. Offered alternate years. Attribute: Upper-Division

BIO 4590 SPECIAL STUDIES IN BIOLOGY (3) Registration Approval: Internship Contract Req. Provides an opportunity for advanced biology. Students are assigned a teaching, grading, lab preparation and/or tutorial duties. May be repeated for credit up to 5 credits. Attribute: Upper-Division

ADDITIONAL Core Courses BS I BS II

BIO 2101 General Biology 5 5
BIO 2102 General Biology 5 5
BIO 2103 General Biology 5 5
BIO 3310 Microbiology 5 5
BIO 4352 Cell Biology 5 5
CHM 1211 General Chemistry 5 5
CHM 2372 Organic Chemistry 5 5
CHM 4590 Quantitative and Instrumental Analysis or CHM 4300 Physical Chemistry for the Life Sciences 5 5

Field Biology Requirement

The requirements for the biology major shown in this addendum replace the information printed in the 2001-2002 SPU Undergraduate Catalog.
B.I.O. 2101 BIOCHEMISTRY (3) Prerequisites: B.I.O. 2103 and MAT 1360 or HSC 4044. Explores the factors and mechanisms responsible for population dynamics, community structure and the function of ecosystems. Includes laboratory. Attributes: B.I.O. 2102 and Upper-Division.

B.I.O. 2103 BACTERIOLOGY (3) Prerequisites: B.I.O. 2101 and CHM 1100 or equivalent. Intended for students majoring in biology. Surveys scientific method, chemistry of living organisms, organization of cells, and foundations of genetics and molecular biology. Includes laboratory. Attributes: Biological Sciences and Natural Science A.

B.I.O. 2104 MOLECULAR BIOLOGY (4) Prerequisite: B.I.O. 2101 or permission of instructor. Explores selected topics, including immunoglobulins and complement, immunity, immunologic diseases, and new developments in vaccines. Includes laboratory. Attributes: Upper-Division.

B.I.O. 2129 HUMAN ANATOMY AND PHYSIOLOGY (5) Prerequisite: One year of high school chemistry, CHM 1100 or equivalent. Explores the nature of human tissues and organ systems emphasizing cellular specialization, organelle models and chemical dynamics. Includes laboratory. Course Equivalent: EGR 2129. Attributes: Upper-Division.

B.I.O. 2130 HUMAN ANATOMY AND PHYSIOLOGY (5) Prerequisite: B.I.O. 2101 or permission of instructor. Explores the nature of human tissues and organ systems emphasizing cellular specialization, organelle models and chemical dynamics. Includes laboratory. Course Equivalent: EGR 2130. Attributes: Upper-Division.

B.I.O. 2130 HUMAN ANATOMY AND PHYSIOLOGY (5) Prerequisites: B.I.O. 2101 and MAT 1360 or HSC 4044. Explores the factors and mechanisms responsible for population dynamics, community structure and the function of ecosystems. Includes laboratory. Attributes: B.I.O. 2102 and Upper-Division.


B.I.O. 3252 GENETICS (5) Prerequisites: B.I.O. 2101, and MAT 1360 or HSC 4044. Introduces the concepts of heredity in both sexual and asexual organisms. Basic principles of population genetics and mendelian genetics are discussed. Includes laboratory. Attributes: Upper-Division.

B.I.O. 3253 GENETICS (5) Prerequisites: B.I.O. 2101, and MAT 1360 or HSC 4044. Introduces the concepts of heredity in both sexual and asexual organisms. Basic principles of population genetics and mendelian genetics are discussed. Includes laboratory. Attributes: Upper-Division.


B.I.O. 3325 MOLECULAR BIOLOGY (5) Prerequisites: B.I.O. 2101 and CHM 3225. Explores the relationship of microorganisms to other living organisms, the biogeochemical cycles, immunochemistry and clinical microbiology. Required laboratory focuses on culturing microorganisms and basic microbiological techniques. Attributes: Upper-Division.

B.I.O. 3326 MICROBIOLOGY (5) Prerequisites: B.I.O. 2101 and CHM 3225. Explores the relationship of microorganisms to other living organisms, the biogeochemical cycles, immunochemistry and clinical microbiology. Required laboratory focuses on culturing microorganisms and basic microbiological techniques. Attributes: Upper-Division.


B.I.O. 3340 ANIMAL BEHAVIOR (5) Prerequisites: B.I.O. 2102, 2103. Examines the mechanisms and evolution of behavior in the major animal groups, exploring the application of scientific thinking and methodology to the study of animal behavior. Includes laboratory and discussion. Offered alternate years. Attributes: Upper-Division and Writing Course.


B.I.O. 3345 MYCOLOGY (5) Prerequisite: B.I.O. 2101. Considers the members of the kingdom fungi and some pseudofungal organisms. We will consider the taxonomy, biology, morphology, structure, ecology, environmental importance and commercial value of fungi. Blakely Chemical Gardens. Attributes: Upper-Division.


B.I.O. 3430 EVOLUTIONARY BIOLOGY (5) Registration Approval Required. Prerequisites: B.I.O. 2101, 2325. Explores gene regulation and expression in several organisms including bacteria, viruses, yeast, plants and animals. Principles of molecular genetics and genetic engineering including gene mapping, DNA isolation and amplification, gene cloning, and genetic screening and sequencing. Advanced topics in molecular biological research will be presented. Includes laboratory. Offered alternate years. Attributes: Upper-Division.

B.I.O. 3430 EVOLUTIONARY BIOLOGY (5) Registration Approval Required. Prerequisites: B.I.O. 2101, 2325. Explores gene regulation and expression in several organisms including bacteria, viruses, yeast, plants and animals. Principles of molecular genetics and genetic engineering including gene mapping, DNA isolation and amplification, gene cloning, and genetic screening and sequencing. Advanced topics in molecular biological research will be presented. Includes laboratory. Offered alternate years. Attributes: Upper-Division.

B.I.O. 3430 EVOLUTIONARY BIOLOGY (5) Registration Approval Required. Prerequisites: B.I.O. 2101, 2325. Explores gene regulation and expression in several organisms including bacteria, viruses, yeast, plants and animals. Principles of molecular genetics and genetic engineering including gene mapping, DNA isolation and amplification, gene cloning, and genetic screening and sequencing. Advanced topics in molecular biological research will be presented. Includes laboratory. Offered alternate years. Attributes: Upper-Division.

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