

Course Offerings: Biology Majors and Minors

Winter 2025

BIOL 112 – Introduction to Animal Behavior

3 Hour(s) Credit

Designed to expose non-majors to the broad field of animal behavior. Learn the foundational concepts in animal behavior. Some topics include the evolution of behavior, communication, learning and cognition, reproductive behavior, and sociality. Use current scientific literature, assigned readings and videos, and journal activities to explore how animal behavior can be tested experimentally. Does not satisfy requirements within the biology major. **Three hours per week. Meets General Education: Solutions Through Science (STS)**

BIOL 211– Microbiology

4 Hour(s) Credit

Fundamental course in the study of microorganisms and their activity, with emphasis on bacteria. **Two**

BIOL 211– Microbiology
4 Hour(s) Credit

BIOL 322 – Parasitology

4 Hour(s) Credit

An introduction to parasites of medical importance for humans and agricultural and domestic animals. Materials emphasize parasite life cycles, infection pathways, impacts on hosts, diagnosis and whether there is currently an effective treatment. **Three hours lecture, three hours laboratory per week.**

Prerequisites BIOL 213

BIOL 350 – Cell Biology

4 Hour(s) Credit

Focuses on the structure and function of eukaryotic cells. Topics covered include enzyme kinetics, membrane transport, cell signaling, intercellular protein trafficking, cellular respiration, mitosis and meiosis, the cell cycle, and cancer. **Three hours lecture, three hours laboratory per week.**

Prerequisites BIOL 201 or BIOL 210, and CHEM 122

BIOL 360 – Genetic Analysis

4 Hour(s) Credit

Introduction to genetic analysis including Mendelian principles, population and quantitative genetics, cytogenetics and contributions to molecular biology. Satisfies Biology Department core requirements for genetics. **Three hours lecture, three hours laboratory per week. Prerequisites** BIOL 201 or BIOL 202 or BIOL 210. **Recommended Prerequisites** MATH 155

BIOL 370 – Molecular Genetics

4 Hour(s) Credit

Study of mechanisms of heredity emphasizing organization of the genome, mutation and regulation of gene expression. **Three hours lecture, three hours laboratory per week.**

Prerequisites BIOL 350; **Pre or Corequisites** CHEM 221

BIOL 375 – Evolution

3 Hour(s) Credit

As the unifying principle of biology, evolution integrates levels of biological organization, with a focus on biological changes over time and the evidence of the shared evolutionary history of all living things.

Topics include speciation; extinction; population processes of selection and adaptation, genomics, and the molecular basis of evolution; sexual selection; life history evolution; and the application of evolution to medicine. **Three hours per week. Prerequisites** BIOL 202 or BIOL 210

BIOL 390 – Intermediate Special Topics in Biology: Fungi and Human Health

3 Hour(s) Credit

Fungi form an integral part of the earth's biosphere & are the third most abundant life form. They play a variety of important roles in the environment, including decomposition of organic matter & nutrient delivery to plants. Fungi are the source of many drugs, antibiotics such as penicillin, the immune suppressant cyclosporine which enables organ transplants and statins which lower cholesterol. Among the 150,000 or so described fungal species on Earth, about 10% directly or indirectly threaten human health & welfare. Major threats include mushroom poisoning, food contamination by mycotoxins, infections of crop plants & mycoses in humans. In this course we will broadly examine the relationship between fungi & human health. **Prerequisites** Biol 201 & Biol 202. **Three hours per week.**

BIOL 408 – Neurobiology

4 Hour(s) Credit

Explores the physiological and anatomical underpinnings of the vertebrate nervous system. **Three hours lecture, three hours lab per week. Prerequisites** BIOL 215 or BIOL 350 or CHEM 417 or PSYC 301.

BIOL 410 – Estuarine Ecology

4 Hour(s) Credit

Introduction to the physical, chemical and geological characteristics of estuaries with emphasis on East Coast estuaries such as the Chesapeake Bay. Detailed discussion of the biological and chemical processes important in estuarine ecosystems with a major emphasis on current literature and research in estuarine biology. **Three hours lecture, variable hours lab per week, with required weekend off-campus field experiences. Prerequisites BIOL 310.**

BIOL 423 – Biology of Reptiles and Amphibians

4 Hour(s) Credit

Focuses on many aspects of the study of reptiles and amphibians, including evolution, taxonomy, physiology, behavior, mating systems, ecology and conservation. Labs and field trips emphasize identification, field observation and natural history of local species.

Three hours lecture, three hours laboratory per week. Prerequisites BIOL 202

BIOL 450 – Internship in Biology

1-3 Hour(s) Credit

Experiences in biology-related work provide students with an opportunity to use acquired biological knowledge in a professional way and to investigate potential career options. Under special circumstances this course may be taken a second time for credit, but only with permission of the internship coordinator. Does not satisfy requirements within the major. **Forty-five student contact hours per credit hour. Prerequisites Junior standing, biology major and approval of Internship Coordinator. (P/F)**

Summer 2025

BIOL 105 – Vanilla Beans and Peppercorns: The Environmental Impact of the Search for Flavor

3 Hour(s) Credit

Introduces the non-biology major to the broad principles, fundamental ideas and new discoveries in

biology to the pressing social and cultural issues of today. **Does not satisfy requirements within the major. Three hours per week. Meets General Education IVB prior to Fall 2024.**

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BIOL 211– Microbiology

4 Hour(s) Credit

Fundamental course in the study of microorganisms and their activity, with emphasis on bacteria. **Two hours lecture, four hours laboratory per week. Meets General Education Prior to Fall 2024: IVB Prerequisites BIOL 101 or BIOL 201 or BIOL 210 or BIOL 215.**

BIOL 215 – Human Anatomy & Physiology I

4 Hour(s) Credit

Comprehensive study of the structure and function of the human organism, including the integumentary, skeletal, muscle, nervous, and endocrine systems. **IVA or IVB. Recommended Prerequisites BIOL 101 or BIOL 213**

BIOL 217 – Nutrition (expected Summer 2025)

This course provides a foundation for both majors and non-majors in the science of nutriTF2 11 Tf1 0 0 2 0 6F1 11