Course Offerings: Biology Majors and Minors

Summer 2026

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 that significantly affect the human being's present and future existence. Relates the study of 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.**

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 hours of lecture, four hours of laboratory per week. Meets General Education Prior to Fall 2024: IVB Prerequisites BIOL 101 or BIOL 201 or BIOL 210 or BIOL 215.**

BIOL 217 – Nutrition
3 Hour(s) Credit
This course provides a foundation for both majors and non-majors in the science of nutrition, including biological and biochemical backgrounds for the understanding of nutritional requirements. Students will have the opportunity to evaluate and alter their current diet and will participate in assignments that can be applied even after the completion of the class. **Does not satisfy requirements within the biology major. The course is three hours per week and is completely online and asynchronous.**

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**

Fall 2026

BIOL 106 – Forensics
3 Hour(s) Credit
Forensics is where the fields of science and law meet, often to solve crimes. Gain a blended lecture and laboratory-based introduction to the study of forensics with an emphasis placed on crime scene processing as well as the evidence that is recovered during these investigations. While focusing on the science used in solving crimes, note that potentially sensitive matters such as violent crimes and death investigations are discussed. **Three hours and 20 minutes per week. Meets General Education: Solutions Through Science (STS)**

BIOL 150 – Environmental Science: Concepts and Methods
4 Hour(s) Credit
Explores global and regional environmental processes and systems, as well as the impact of humans on these systems. Addresses current environmental issues such as climate change, habitat loss, and water pollution, emphasizing the role of science in identifying problems and finding solutions. Does not satisfy requirements within the major. **Three hours lecture, two hours lab per week. Meets General Education: Environmental Sustainability (ES), Hands-On Science (HOS). Meets General Education Prior to Fall 2024: IVA or IVB**
Cross-Listed With (May Not Receive Credit for Both) GEOG 150

BIOL 201 – Introduction to Biology: Molecular and Cell Biology
4 Hour(s) Credit
Introduction to biological molecules, cellular anatomy, and cellular function. Build fundamental understanding of molecular core concepts and skills that serve as a foundation for all more advanced coursework in biology. Emphasizes the chemistry of biology, properties of biological molecules, cellular composition, cellular function and diversity, metabolism, and genetics. One of two introductory courses (along with BIOL 202) required for biology majors. **Three hours lecture, three hours lab per week. Meets General Education: Hands-on Science (HOS), Solutions Through Science (STS). Met General Education Prior to Fall 2024: IVA and IVB. Recommended Prerequisites/ Corequisites MATH 140 or equivalent**

BIOL 202 – Introduction to Biology: Ecology and Evolution
4 Hour(s) Credit
Includes practice with the core concepts and skills that biologists use to study and preserve life. Explore several facets of biodiversity: its evolutionary origin, its ecological and societal importance, threats from human impacts, and solutions to preserve and restore biodiversity and ecosystem function to enable environmental sustainability. **Three hours lecture, three hours laboratory per week. Meets General Education: Hands-on-Science (HOS), Solutions Through Science (STS), Environmental Sustainability (ES). Met General Education Prior to Fall 2024: IVA and IVB. Recommended Prerequisites/Corequisites MATH 140 or equivalent**

BIOL 205 – Fundamentals of Human Anatomy and Physiology
4 Hour(s) Credit
Intended for health education and physical education majors, emphasizes the musculoskeletal, nervous, cardiovascular and respiratory systems. **Does not satisfy requirements within the biology major. Three hours lecture, three hours laboratory per week. Meets General Education Prior to Fall 2024: IVA or IVB**

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 212 – Introduction to Plant Biology
4 Hour(s) Credit
Fundamental course exploring the diversity of plant life from an evolutionary perspective, the unique strategies that enable plants to grow, survive, and reproduce in different environments, and the interactions between plants and other organisms. Designed for biology majors and other science students. **Three hours lecture, three hours laboratory per week. Met General Education Prior to Fall 2024: IVB. Prerequisites BIOL 201 or BIOL 202 or BIOL 210**

BIOL 213 – Zoology
4 Hour(s) Credit
Study of the biodiversity, structure and functions of animals and animal-like protists with emphasis on their evolutionary relationships. Designed for biology majors and minors and other science majors. **Three hours lecture, three hours laboratory per week. Meets General Education Prior to Fall 2024: IVA or IVB Prerequisites BIOL 202 or BIOL 210**

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. **Three hours lecture, three hours laboratory per week. Met General Education Prior to Fall 2024: IVA or IVB.**
Recommended Prerequisites BIOL 101or BIOL 213

BIOL 216 – Human Anatomy and Physiology II
4 Hour(s) Credit
Comprehensive study of the structure and function of the human organism, including the circulatory, respiratory, digestive, urinary, immune, and reproductive systems.
Three hours lecture, three hours laboratory per week. Meets General Education Prior to Fall 2024: IVB. Prerequisites C or better in BIOL 215

BIOL 217 – Nutrition
3 Hour(s) Credit
Foundation in the science of nutrition, including biological and biochemical backgrounds for the understanding of nutritional requirements. Does not satisfy requirements within the major. Three hours of lecture per week. **Met General Education IVB prior to Fall 2024.**

BIOL 302 – Bioinformatics I
4 Hour(s) Credit
Computer-based course introduces biological databases. Emphasis placed on quantitative approaches to modeling and analyzing biological data. **Three hours lecture, three hours laboratory per week. Prerequisites BIOL 201 or BIOL 202 or BIOL 210. Pre or Corequisites MATH 198 or MATH 201**

BIOL 310 – Ecology
4 Hour(s) Credit
Introduction to the interactions between organisms and their environment. Biotic and abiotic factors affecting individuals, populations, communities and ecosystems emphasized. **Three hours lecture, three hours laboratory per week. Prerequisites BIOL 202 or BIOL 210**

BIOL 323 – Medical Microbiology
4 Hour(s) Credit
Study of the medically important microorganisms, including methodology and techniques of identification. **Two hours lecture, four hours laboratory per week. Prerequisites** BIOL 211

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 401 – Wetland Ecology
4 Hour(s) Credit
Study of relationships between environmental features and the structure and function of wetland types. Emphasizes hydrology, biogeochemistry and species composition and examines effects of natural and human disturbances on wetland ecosystems. Three hours lecture, three hours laboratory per week. **Prerequisites BIOL 310**

BIOL 407 – Biology of Fishes
4 Hour(s) Credit
Study of evolution, ecology, and behavior of fishes, focusing on adaptations to the aquatic environment. The laboratory focuses on specific anatomy, physiology, and taxonomy, as well as field techniques. **Prerequisite: BIOL 213.** Two hours of lecture, four hours of laboratory per week.

BIOL 415, 416 – Research in Biology
1–3 Hour(s) Credit
Independent student research under the supervision of a faculty member. Schedule to be arranged individually. **Forty-five contact hours per credit hour**. **Prerequisites: Permission of instructor. May be repeatable and receive credit within the major for up to six credits combined of BIOL 415, BIOL 416, and BIOL 420.**

BIOL 418 – Biology Seminar
1 Hour(s) Credit
Discussions of timely topics in biology and related fields. Includes instruction in seminar preparation and requires student presentations and participation. **One hour per week. Prerequisites Junior standing or permission of instructor.**

BIOL 420 – Readings in Biology
1–3 Hour(s) Credit
Readings designed to permit in-depth study of selected topics. Students submit written reports of their findings at the end of the semester. Specific topics are indicated on students' transcripts. Only three credits may count toward the major. **Prerequisites: Sixteen credits in biology, permission of the instructor. May be repeatable and receive up to three credits within the major with a maximum of six credits combined of BIOL 415, BIOL 416, and BIOL 420.**

BIOL 425 – Toxicology
3 Hour(s) Credit
Introduction to basic principles, history, and scope of modern environmental toxicology, as well as the effects and mechanisms of toxicants. Includes applications to risk assessment, regulations and industry. May not be taken for credit if student has credit for ENVH 425. Three hours per week. **Prerequisites BIOL 201 or BIOL 210, CHEM 122, junior standing**

BIOL 444 – Hormones and Behavior
3 Hour(s) Credit
Provides a comparative approach to the behavior of vertebrate animals (both human and non-human), with special emphasis on the evolution and proximate control of behavior. Relates the genetic, neural, and hormonal influences on behavior, including male and female sexual behavior, courtship, aggression, social attachment, parental care, stress and anxiety, and cognition. **Prerequisite: BIOL 216 or BIOL 350.** Three hours lecture per week.

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)**

BIOL 467 – Stable Isotope Ecology
4 Hour(s) Credit
Introduction to applications of stable isotopes in ecological studies. Topics include isotopic measurements for investigations into terrestrial, aquatic and marine systems, including hands-on data collection and analysis. **Two hours lecture/laboratory per week, two hours online per week Prerequisites** BIOL 310 and CHEM 121, or instructor permission.

BIOL 470 – Biotechnology
3 Hour(s) Credit
Study of applied aspects of biology with an emphasis on DNA technology. Recommended as a capstone course for Biology majors in the Cell and Molecular Biology/Biotechnology track. **Prerequisite: BIOL 370.** Three hours per week.

BIOL 490 – Advanced Special Topics in Biology (Human Genetics)
3 Hour(s) Credit
An in-depth introduction to human genetics and genomics, focusing on genome structure, inheritance patterns, and the molecular basis of genetic disease. Emphasis is placed on clinical applications, ethical issues, and the communication of genetic concepts through case studies and student presentations. Prerequisites: Permission of instructor or 12 credits of biology, junior standing. Three hours per week.
