

Biology Course Descriptions

- BIO 103** **Environmental Science** **3 credits**
A topic-oriented course which examines the interrelated problems of population, food-supply and demand, pollution, and water resources. It is intended to provide the information required for making intelligent choices about issues that are scientific, social, political, and economic in nature.
- BIO 120** **General Biology I** **3 credits**
Introduction to biological phenomena designed to acquaint the student with biological principles and their application to living systems. Emphasis is on structure and function at the molecular-cellular level of organization in plants and animals. Also includes an analysis of the basic principles of inheritance as seen in various living forms.
- BIO 121** **General Biology Laboratory I** **2 credits**
Co-requisite or Prerequisite: BIO 120.
An introduction to the experimental nature of the science of biology. Laboratory exercises demonstrate physical, physiological, and biochemical processes that are important to life. The diversity of life is explored by observing both living and prepared specimens from the Kingdoms of Protista, Monera, Fungi, and Plantae and by correlating form with function.
- BIO 122** **General Biology II** **3 credits**
A continuation of BIO 120. The course is an introduction to biology at the organismal and population levels. Topics include physiology, development, ecology, evolution and animal behavior. BIO 120 is not a pre-requisite.
- BIO 123** **General Biology Laboratory II** **2 credits**
Co-requisite or prerequisite: BIO 122
Continuation of BIO 121 with laboratory exercises emphasizing evolution, population growth, survey of Kingdom Animalia, mammalian structure and function, and fundamentals of vertebrate embryology. BIO 121 is not a pre-requisite.
- BIO 260** **Comparative Vertebrate Anatomy** **3 credits**
Co-requisite: BIO 261.
Structural and physiological adaptations which have evolved among vertebrates, and which permit them to live in various kinds of habitats. Special emphasis is placed on the evolution and diversity of organ systems.
- BIO 261** **Comparative Vertebrate Anatomy Laboratory** **2 credits**
Co-requisite: BIO 260.
Detailed study of slides and other demonstration material, together with dissection of selected vertebrate types.
- BIO 270** **Genetics** **3 credits**
Prerequisite: BIO 120.
The study of heredity. The course covers Mendelian genetics, molecular and biochemical genetics, quantitative inheritance and population genetics.

Microscopic study of slides together with experiments which are illustrative of the material discussed in BIO 370.
- BIO 375** **Human Genetics** **3 credits**
Prerequisite: BIO 270 or BIO 474.
Course topics include Mendelian inheritance in man, chromosomal aberrations, mutation, polygenic inheritance, studies of the human genome, probability and genetic counseling.

- BIO 420** **Evolution** **3 credits**
Prerequisite: BIO 270.
 A discussion of organic evolution. Evidence of evolution, mechanisms driving evolution, population genetics, and forces causing biological diversity are emphasized.
- BIO 421** **Microbiology** **3 credits**
Prerequisite: BIO 120, 122.
 The biology of microorganisms: microbial cell structure, growth and reproduction, virology, molecular genetics, plasmids, transposons, microbial ecology, food microbiology, infectious disease, and industrial microbiology.
- BIO 422** **Microbiology Laboratory** **2 credits**
Prerequisite: BIO 120, 122, Pre or co-requisite: BIO 421.
 An experimental laboratory course designed to employ valuable techniques which are unique to the science and illustrate principles presented in BIO 421.
- BIO 448** **Ecology** **3 credits**
Prerequisite: BIO 120, 122 and CHM 107, 108.
 An overview of the biological and physical processes found in ecosystems. Also included are factors affecting biological population structures, interactions and evolution.
- BIO 449** **Ecology Lab** **2 credits**
Prerequisite: MTH 140 or BIO 290. Pre or co-requisite: 448.
 A combined field and laboratory course designed to augment the principles discussed in BIO 448. Ecological concepts are illustrated by experimentation and analysis of data.
- BIO 451** **Plant Form and Function** **3 credits**
Prerequisite: BIO 120, 122, CHM 107, 108, or instructor's permission.
 An introduction to the form and function found in the Kingdom Plantae. Topics include photosynthesis, water relations, morphogenesis, plant growth and development. A brief overview of the major taxonomic groups of plants, as it relates to morphology and development, is also presented.
- BIO 452** **Plant Form and Function Laboratory** **2 credits**
 A set of laboratory exercises designed to introduce students to the anatomy and physiology of plants.
- BIO 463** **Physiology** **3 credits**
Prerequisite: BIO 120, 122, and CHM 227.
 An analysis of the specific contribution of each human organ system toward the maintenance of a stable internal environment. The integration of these contributions is used to understand the concepts of homeostasis and its alteration in disease states.
- BIO 464** **Physiology Laboratory** **2 credits**
Pre or co-requisite: BIO 463.
 Demonstration of physiological topics discussed in BIO 463 with emphasis on animal model systems that explore concepts in experimental design.
- BIO 474** **Cell and Molecular Biology** **3 credits**
 An examination of basic concepts and experimental methodologies of cellular and molecular biology. Lecture presentations examine how genes work, ways in which proteins work together, and membrane structure and function. The course emphasizes cell interactions.

BIO 475**Cell and Molecular Biology Laboratory****2 credits**

Exercises demonstrating basic principles of biochemistry and cytochemistry used to investigate cellular organelles and their physiology. Included is an introduction to current molecular biology techniques and procedures.

BIO 499**Biology and Social Issues****3 credits**

An examination of the effect of science on society and of social attitudes on the practice of science. The course is required of all biology majors during their final year.