

# Biology

## Biology Classes

### BIO 110: Nature and Humanity

This course is an introduction to environmental issues – the interactions of humanity and industrial civilization with the natural environment of Earth. The course draws on scientific, technological, and social perspectives to examine current and future environmental challenges, including the impacts of human actions on natural ecosystems, natural resources, pollution, and climate change.

**Units:** 3

**Program:** [Biology](#)

### BIO 115: Cancer Biology

Everyone knows someone who has been impacted by cancer. By merely surviving, our bodies are primed with the capacity to develop this disease. This course will explore the ‘war on cancer’ in the context of human history, cell biology, and dramatic storytelling. Laboratory exercises will explore the biological basis of this disease. Not open to students who are enrolled in or who have taken and passed IBC 200 with at least a grade of C- or P.

**Units:** 3

**Program:** [Biology](#)

### BIO 120: Human Body in a Modern World

The human body is an amazing product of 3.5 billion years of evolution. From our cells to our organ systems, our bodies are beautifully designed to thrive on planet Earth. In this course, we will explore the structure and function of various human organ systems including the circulatory system, respiratory system, digestive system, reproductive system, and portions of the endocrine system (kidneys and adrenal glands). Along the way, we will discuss challenges faced by each of these organ systems in this modern age that can result in disease such as air pollution, endocrine disrupting chemicals, overuse of antibiotics, chronic stress, and a highly-processed industrial diet. Students will perform various hands-on laboratory activities that will reinforce how their bodies function and how they can live a healthy life. Not open to students who are enrolled in or who have taken and passed BIO 303 with at least a grade of C- or P.

**Units:** 3

**Program:** [Biology](#)

### BIO 130: Genetics and Evolution

Have you ever wondered about DNA and how slight alterations to the genetic code have produced the amazing variety of life forms that inhabit our planet? This class will explore exciting topics in both genetics and evolutionary biology, some of which include: the genetics of cancer, reproduction and inheritance, epigenetics, GMOs, DNA forensics, antibiotic resistance, evolution of the “fat gene,” and how to build evolutionary trees. Students will explore these topics through lectures, case study work, and hands-on laboratory exercises. Not open to students who are enrolled in or who have taken and passed IBC 200 with at least a grade of C- or P.

**Units:** 3

**Program:** [Biology](#)

## BIO 135: Animal Diversity

This course explores the anatomical form and function of representatives from major animal phyla. Students will first learn about evolutionary processes that have generated the tremendous variety of form and function present in the animal kingdom. They will then learn about different lines of evidence that support the theory of common descent and examine how major lineages within the animal kingdom were created from key morphological innovations. Students will then take a tour of the major animal phyla. Students will explore these topics through lectures and hands-on laboratory activities that include live animal observations, dissections, field trips, and case studies. Not open to students who are enrolled in or who have taken and passed BIO 306 with at least a grade of C- or P.

**Units:** 3

**Program:** [Biology](#)

## BIO 222: Marine Biology

This course focuses on the physical, chemical and biological characteristics of marine habitats and the organisms occupying those habitats, and provides a survey of the patterns of distribution, diversity, and abundance of species in marine communities, with an emphasis on the dynamic interactions which shape these patterns. The course also includes analysis of human impacts on marine ecosystems.

**Units:** 3

**Program:** [Biology](#)

## BIO 301: Genetics

This course will take an in-depth analysis of prokaryotic and eukaryotic genetics at the level of molecular, cellular, organismal, and population genetics. Data analysis will rely on a quantitative approach. An integrated laboratory project will utilize basic genetic techniques.

**Units:** 3

**Prerequisites:**

CHEM 150 and IBC 200.

**Program:** [Biology](#)

## IBC 200: Integrated Biology and Chemistry with Lab

This interdisciplinary course will focus on the molecular biology of cancer and the underlying chemistry of cell biology. Students will learn how proteins are encoded and the impact of genomic instability on protein structure and function; alterations of normal metabolism in cancer cells; and basic pathways of cell division and death. Complementary chemistry topics include chemical structure and bonding, biological polymerization, thermodynamics, enzyme kinetics, and redox reactions. Laboratory research will use model systems to understand cancer biology. *Intended for Life Sciences concentrators and those planning to pursue post-graduate science or health programs.*

**Units:** 4

**Prerequisites:**

CHEM 150 or instructor consent.

**Program:** ChemistryBiologyPhysical Science