

BIOLOGY

Cascade Campus
Jackson Hall (JH), Room 210
971-722-5209

Rock Creek Campus
Building 7, Room 202
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Sylvania Campus
Health Technology (HT), Room 305
971-722-4225

www.pcc.edu/pcc/pro/progs/bit/

DESCRIPTION

At PCC, Biology course offerings include biology classes for those interested in introductory topics, environmental habitats, anatomy and physiology, microbiology, and a wide variety of other science majors' classes.

Work in the sciences is an important part of many college programs. Courses at PCC are organized to present basic principles and to provide a coordinated overview of the sciences as they relate to living systems. See the Course Description (BI) section of this catalog for individual Biology courses and course prerequisites.

COURSE DESCRIPTIONS

BI 55 Human Biology 4.00 Surveys human body systems. Exercises include the identification of structural components of the body as well as investigations in physiology. Designed for students in the Medical Assisting and Ophthalmic Medical Technology programs. Prerequisites: Good command of the English language and Placement into RD 90. Audit available.

BI 101 Biology 4.00 Introduces the properties of life, morphology and physiology of cells, cell chemistry, energy transformation, and the basic principles of ecology. A laboratory science course designed for non-biology majors. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

BI 101H Biology: Honors 4.00 An honors laboratory science course designed for non-biology majors. Introduces the properties of life, morphology and physiology of cells, cell chemistry, energy transformation, and the basic principles of ecology. Course explores the application of biological principles to other disciplines. Prerequisite: WR 115, RD 115 and MTH 20 or equivalent placement test scores AND 3.25 GPA.

BI 102 Biology 4.00 Presents protein synthesis, cell division, genetics, reproduction and development, and evolution. Designed as a laboratory science course for non-biology majors. The second course of a three-course sequence. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores, and BI 101. Audit available.

BI 103 Biology 4.00 Presents the evolutionary relationships among the kingdoms. Includes a comparison of biological systems across kingdoms. Designed as a laboratory science course for non-biology majors. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores, and BI 101. Audit available.

BI 112 Cell Biology for Health Occupations 5.00 A laboratory science course designed as a prerequisite course for students who plan to take microbiology and/or anatomy and physiology. Topics will include study of the scientific method, cellular chemistry, cell structure and function, principles of inheritance, and laboratory skills. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

BI 121 Introduction to Human Anatomy and Physiology I 4.00 Surveys anatomical terminology, basic chemistry, cell structure and function, tissues, and the following systems: integumentary, skeletal, muscular, and nervous. Lecture discussions complemented by laboratories involving physiological exercises, dissections, microscopy, and multimedia. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

BI 122 Introduction to Human Anatomy and Physiology II 4.00 Surveys the endocrine, lymphatic, cardiovascular, digestive, respiratory, reproductive, urinary, and some coverage of human development, human genetics, and immunology. Lecture discussions are complemented by laboratories which include physiological exercises, dissections, microscopy, and multimedia. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores, and BI 121. Audit available.

BI 141 Habitats: Life of the Forest 4.00 Examines structure and function of Oregon forest ecosystems. Covers distribution and interactions of plants, animals, microorganisms, climate and basic geology. Laboratory emphasizes identification and environmental testing. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

BI 142 Habitats: Marine Biology 4.00 Examines marine environment and the ecology, physiology, and morphology of marine plants and animals, emphasizing Oregon. Laboratory focuses on identification and environmental testing. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

BI 143 Habitats: Fresh Water Biology 4.00 Covers environments of freshwater streams, lakes, and marshes. Includes effects of physical and chemical factors on organisms, along with the organisms, their biological interactions and nutrient cycles. Explores ecological factors of freshwater environments and the effects of human activities on them. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

BI 145 Introduction to Fish and Wildlife Conservation and Management 4.00 Introductory lecture and laboratory on fundamental wildlife conservation and management. Course will cover the basic elements of wildlife population dynamics, biodiversity, the importance of habitat, legal and social aspects of wildlife management, human impacts on wildlife, and some management techniques. Wildlife examples from Oregon will be included. Prerequisites: Placement into MTH 60 and placement into WR 115. Recommended: BI 101 or equivalent. Audit available.

BI 160 Ecology/Field Biology: Coast 2.00 Field trip experience designed to introduce the relationships among plants, animals and the general geologic formation of various life zones for the Oregon Coast. Audit available.

BI 161 Ecology/Field Biology: Malheur 2.00 Field trip experience designed to introduce the relationships among plants, animals and the general geologic formation of various life zones for the Malheur geographical area. Audit available.

BI 163 Organic Gardening 4.00 Introduces the structure and function of soils including the soil food web, composting and compost tea, and the basics of biogeochemical cycling. Explores basic plant anatomy and growing flowers, vegetables and fruits in the Pacific Northwest. Includes organic pest control, beneficial insects and pruning and grafting. The laboratory will elucidate these concepts. An interest in plants and a basic high school biology course are recommended. Audit available.

BI 164 Bird ID and Ecology 4.00 An introductory course to the biology of birds of the Pacific Northwest. Emphasizes learning bird identification in the field by sight and sound. Aspects of avian ecology, natural history, and behavior will be studied. The student will be introduced to field techniques for identifying and studying birds. Recommended completion of WR 115 or placement into WR 121. Audit available.

BI 198 Independent Study - Provides an opportunity for students to work independently on an individualized area of study within biology under the sponsorship and guidance of a biology faculty member. Prerequisite: Instructor permission. Audit available.

BI 200A Principles of Ecology: Field Biology 2.00 Introduction to concepts of ecology. Includes lecture component covering the concepts of ecology and diversity of life and a field component surveying plants, animals, or other kingdoms, and interactions with their environment. May involve national or international travel. Prerequisite: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

BI 200B Principles of Ecology: Field Biology 4.00 Introduction to concepts of ecology. Includes lecture component covering the concepts of ecology and diversity of life and a field component surveying plants, animals, or other kingdoms, and interactions with their environment. May involve national or international travel. Prerequisite: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

BI 200C Principles of Ecology: Field Biology 6.00 Introduction to concepts of ecology. Includes lecture component covering the concepts of ecology and diversity of life and a field component surveying plants, animals, or other kingdoms, and interactions with their environment. May involve national or international travel. Prerequisite: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

BI 202 Botany 4.00 A laboratory science course designed to have students develop knowledge about plant anatomy, physiology, how humans interact with plants, and particularly taxonomy with an evolutionary focus. Areas covered include mosses, ferns, conifers, and flowering plants. Recommended for students interested in agriculture, horticulture, ethnobotany, and general botany. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

BI 211 Principles of Biology 5.00 Includes introduction to science, biochemistry, metabolism, the cell, molecular biology, and reproduction. The first course of a three-course sequence for students majoring in biology and the sciences, including pre-medical, pre-dental, chiropractic, pharmacy, and related fields. Recommended: High school biology and chemistry within the past seven years. Prerequisites: WR 115 and RD 115 or equivalent placement test scores, and MTH 60 or higher. Prerequisite/Concurrent: CH 100 or higher; or instructor permission. Audit available.

BI 212 Principles of Biology 5.00 Includes inheritance, the genetic code, modern and classical genetics, evolution, diversity, and systematics. May include some dissection of plants and animals. The second course in a three-course sequence for students majoring in biology and the sciences, including pre-medical, pre-dental, chiropractic, pharmacy, and related fields. Prerequisite: BI 211 and its prerequisite requirements. Audit available.

BI 213 Principles of Biology 5.00 Includes plant and animal anatomy and physiology, and individual, population, community and ecosystem ecology. The third course of a three-course sequence for students majoring in biology and the sciences, including pre-medical, pre-dental, chiropractic, pharmacy, and related fields. Prerequisite: BI 212 and its prerequisite requirements. Audit available.

BI 222 Human Genetics 3.00 Lecture/discussion presentation of the fundamentals of human genetics. Includes physical basis of inheritance, the mechanics of inheritance, probability, sex chromosomal abnormalities, autosomal anomalies, gene structure and function, molecular genetics, behavioral genetics, twinning and contemporary issues in human genetics. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

BI 231 Human Anatomy and Physiology I 4.00 Introduces chemistry, cell, tissues, the integument, skeletal, muscular and nervous systems. It is the first course of a three-course sequence. Includes lecture discussions complemented by laboratories involving microscopy, animal dissection, physiological exercises and computer based exercises. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores, and BI 112 or (BI 211 and BI 212). Audit available.

BI 232 Human Anatomy and Physiology II 4.00 Introduces the nervous, endocrine, cardiovascular and immune systems. It is the second course of a three-course sequence. Includes lecture discussions complemented by laboratories involving microscopy, animal dissection, physiological exercises and computer based exercises. Prerequisite: BI 231 with a "C" or better and its prerequisite requirements. Audit available.

BI 233 Human Anatomy and Physiology III 4.00 Introduces the respiratory, digestive, urinary and reproductive systems, metabolism and fluid and electrolyte balances; embryology and genetics. It is the third course of a three-course sequence. This class includes lecture discussions complemented by laboratories involving microscopy, animal dissection, physiological exercises and computer based exercises. Prerequisite: BI 232 with a "C" or better and its prerequisite requirements. Audit available.

BI 234 Microbiology 5.00 Lecture, recitation, and laboratory cover: bacterial identification, morphology, metabolism and genetics; bacterial, viral, and parasitic relationships with human health and disease; and basic immunology. Laboratory stresses aseptic technique, bacterial identification and physiology using a variety of media, culturing techniques, and staining techniques. Recommend BI 231. Prerequisites: BI 112 or (BI 211 and BI 212) and their prerequisite requirements. Audit available.

BI 241 Pathophysiology 3.00 Lecture/discussion presentation of alterations in homeostasis, alterations in cellular function; and diseases of the immune, muscular, skeletal, integumentary, nervous, cardiovascular, respiratory, digestive, endocrine, urinary, and reproductive systems. Prerequisites: BI 231 and 232. BI 233 is either a prerequisite or may be taken concurrently. Audit available.

BI 280A Cooperative Education: Biology Requires students to make a cooperative education training agreement with an instructor, an employer/supervisor, and a cooperative education specialist. The agreement will clearly define student, employer/supervisor, and instructor information as well as the job description (paid or unpaid) and length of job. The job should involve laboratory or field work associated with biology and/or environmental science and should extend student knowledge of Biology/Environmental Science. Prerequisite: BI 101 or BI 211, and instructor permission. Audit available.

BI 287 Introduction to Immunology 4.00 Introduces the principles of immunology including: development of the immune system, innate immunity, immunoglobulin structure and genetics, antigen-antibody reactions, the major histocompatibility complex reactions and antigen presentation, T cell receptors (genetics, structure, selection), T cell activation and effector functions, anergy and apoptosis, cytokines, phagocytic cell function, immune responses to infectious organisms and tumors, autoimmune diseases, autoimmunity, allergies, and immune deficiencies. Recommended for students who seek admission into the allied health programs or clinical technology programs. Prerequisites: BI 112 or (BI 211 and BI 212) Audit available.

BI 298 Biology Independent Study Provides an opportunity for students to work independently on an advanced individualized area of study within biology under the sponsorship and guidance of a biology faculty member. Recommend: Prior study in biology. Prerequisites: Instructor permission. Audit available.