

BIOLOGY

Cascade Campus
Jackson Hall, (JH) Room 210
503-978-5209

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Health Technology, (HT) Room 305
503-977-4225

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Building 7, Room 321
503-614-7257

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

DESCRIPTION

At PCC, Biology (BI prefix) course offerings include biology classes for those interested in introductory topics, environmental habitats, anatomy and physiology, [chemistry](#), 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.

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

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

BI 103 Biology 4.00: A laboratory science course designed for non-biology majors. Presents the evolutionary relationship among the kingdoms. Includes a comparison of biological systems across kingdoms. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores, and (BI 101 or BI 101B) and BI 102.

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.

BI 121 Introduction to Human Anatomy & 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.

BI 122 Introduction to Human Anatomy & 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.

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.

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.

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.

BI 145 Introduction to 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.

BI 160 Ecology/Biology / Coast 1.00: Field trip experience designed to introduce the relationships among plants, animals and the general geologic formation of various life zones for the Oregon Coast.

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.

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.

BI 164 Bird ID and Taxonomy 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.

BI 170 Environmental Science 4.00: Examines major environmental questions facing the world today. Includes population growth, matter and energy resources, ecosystems, pollution, and environment and society. Explores broad range of environmental issues--including sustainability, the interconnection of the economy with ecosystem, short-term versus long-term gains, and the trade-offs in balancing problems and solutions. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores.

BI 198 Independent Study - Biology 1.00-4.00: 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.

BI 200 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. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores.

BI 202 Botany / An Introduction to the Plant Kingdom 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.

BI 211 Principles of Biology 5.00: First term of a three term sequence for students majoring in biology and the sciences, including pre-medical, pre-dental, chiropractic,

pharmacy, and related fields. Includes introduction to science, biochemistry, metabolism, the cell, molecular biology, and reproduction. Recommended: High school biology and chemistry in 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 above; or instructor permission.

BI 212 Principles of Biology 5.00: Second part of a three-quarter sequence designed for students majoring in biology and the sciences, including pre-medical, pre-dental, chiropractic, pharmacy, and related fields. Topics include: inheritance, the genetic code, modern and classical genetics, evolution, diversity, and systematics. This course may include some dissection of plants and animals. Prerequisite: BI 211 and its prerequisite requirements.

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

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.

BI 231 Human Anatomy & Physiology I 4.00: First term of three-term sequence covering: chemistry, cells, tissues; the skin, skeletal and muscular systems and nervous tissue. Lecture discussions complemented by laboratories involving microscopy, animal dissection, physiological exercises and computer work. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores, and BI 112 or (BI 211 and BI 212)

BI 232 Human Anatomy & Physiology II 4.00: Second term of a three-term sequence. Courses may not be taken out of sequence. Covers nervous, endocrine, cardiovascular and immune systems. Lecture discussions complemented by laboratories involving microscopy, animal dissection, physiological exercises and computer work such as CD-ROM-based exercises. Prerequisite: BI 231 with a "C" or better and its prerequisite requirements.

BI 233 Human Anatomy & Physiology III 4.00: Third term of a three-term sequence. Courses may not be taken out of sequence. Covers digestive, respiratory, urinary and reproductive systems; metabolism fluid and electrolyte balance; embryology and genetics. Lecture discussions will be complemented by laboratories involving microscopy, animal dissection, physiological exercises and computer work such as CD-ROM-based exercises. Prerequisite: BI 232 with a "C" or better and its prerequisite requirements.

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.

BI 237 Applied and Environmental Microbiology 4.00: Highlights the medical and environmental aspects of microbiology with an emphasis on genetic engineering, forensics, immunology, epidemiology, emergent diseases, water quality, bioremediation, and food safety. Stresses molecular techniques including DNA fingerprinting, water and food analysis and the manipulation of bacterial genes. Note: this course is not intended to replace Microbiology 234. Prerequisite: (BI 101 or BI 101B) or instructor permission.

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.

BI 280A CE / Biology Cooperative Education 1.00–10.00: 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.

BI 298 Biology Independent Study 1.00–4.00: 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.