

## BIO Biology

### BIO 101 Biology Survey (3-0) 3 crs.

Surveys the science of biology, emphasizing the human organism. Includes chemical and physical properties, physiological systems of control, growth, differentiation, reproduction, genetics, ecology, evolution and ethical considerations. Also includes a broader overview of the plant and animal kingdoms and humans' place in, and interactions with, those kingdoms. (NOTE: Not Lab science credit.) IAI L1 900

### BIO 103 Man and Environment (3-0) 3 crs.

Surveys and analyzes man's role as an environmental modifier. Ecological, social cultural, economic and political influences on environment are considered. The historical and current pollution problems and other environmental disruptions are analyzed and evaluated. Possible remedial courses of action are discussed and evaluated. (NOTE: Not Lab science credit.) IAI L1 905

### BIO 104 Environmental Laboratory Biology (2-4) 4 crs.

Investigates the interrelationship between humans and the environment through scientific inquiry. Lecture and laboratory topics include the scientific method, ecosystems, biodiversity, energy sources, natural resources, conservation, pollution, and population dynamics. Incorporates chemical and physical aspects as applicable to relevant biological concepts. Examines human's ecological, social and cultural impacts on our environment and possible solutions. Laboratory experiences involve some outside field work and field trips. Intended for non-science majors. (NOTE: Lab science credit.) IAI L1 905L

### BIO 105 Heredity, Evolution and Society (3-0) 3 crs.

Examines life and the evolutionary record with emphasis on human genetics and inheritance. Factors such as current applications of biotechnology and its ethical, political and social implications in the 21st century are considered. (NOTE: Not Lab science credit.) IAI L1 906

### BIO 110 Introduction to Biology and Society (3-3) 4 crs.

Surveys the science of biology through scientific inquiry, emphasizing its impacts on humans and society. Includes chemical and physical properties, physiological systems of control, growth, differentiation, reproduction, genetics, ecology, and evolution with ethical and societal considerations. Provides a broad overview of the plant and animal kingdoms as well as the interactions with these organisms and humans, especially from a societal perspective. (NOTE: Lab Science credit) IAI L1 900L

### BIO 115 Fundamentals of Cellular Biology (3-3) 4 crs.

Introduces fundamental processes of organisms operating at the molecular and the cellular level of organization. Topics include chemical and molecular aspects of life, cellular metabolism, genetic information flow, theory of inheritance, genetic engineering and principles of physiology. This is the first course of a two-course series. (NOTE: Lab science credit.) IAI L1 910L, IAI BIO 910

**Prerequisite:** MTH 080 (Intermediate Algebra) or higher with a grade of C or better, or required MTH 103 (College Algebra) placement test score AND placement into ENG 101. [https://www.harpercollege.edu/registration/testing/pdf/Math\\_Placement\\_Grid.pdf](https://www.harpercollege.edu/registration/testing/pdf/Math_Placement_Grid.pdf) [https://www.harpercollege.edu/registration/testing/pdf/ENG\\_Placement\\_Grid.pdf](https://www.harpercollege.edu/registration/testing/pdf/ENG_Placement_Grid.pdf)

### BIO 116 Fundamentals of Organismal Biology (3-3) 4 crs.

Introduces students to higher levels of biological organization from the organism to the ecosystem. Topics include organismal diversity, mechanisms of micro and macroevolution, animal behavior, and the dynamics and organization of populations, communities and ecosystems. (NOTE: Lab science credit.) IAI L1 910L, IAI BIO 910

**Prerequisite:** BIO 115 (Fundamentals of Cellular Biology) with a grade of C or better, or consent of instructor.

### BIO 120 Plants and Society (3-3) 4 crs.

Emphasizes scientific inquiry through selected concepts in biology, such as organization, function, cellular and molecular biology, heredity, diversity, evolution and ecology using plants as the type of organism. Topics include plant structure, diversity, growth, genetics, evolution, physiology and reproduction. Economic, cultural, environmental and medical relationships between plants and humans are emphasized. (NOTE: Lab Science credit.) IAI L1 901L

### BIO 130 Microbiology (2-4) 4 crs.

Examines characteristics and importance of microorganisms; emphasis on identification, anatomy and physiology, control, relationship to health and disease and economic importance. College chemistry or equivalent is desirable. Strongly recommended preparation: One year of high school biology with a grade of C or better taken within the last five years, or BIO 110. (NOTE: Lab science credit.)

**Prerequisite:** Placement into ENG 101. [https://www.harpercollege.edu/registration/testing/pdf/ENG\\_Placement\\_Grid.pdf](https://www.harpercollege.edu/registration/testing/pdf/ENG_Placement_Grid.pdf)

### BIO 135 Introduction to Human Anatomy and Physiology (4-0) 4 crs.

Surveys the human body, with emphasis on basic physical and chemical concepts, anatomy, physiology and embryology. Designed to meet the needs of students in certain allied health career programs. Knowledge of high school biology is assumed. (NOTE: Not Lab science credit.)

### BIO 136 Introduction to Human Disease (3-0) 3 crs.

Surveys the nature of human disease with emphasis on the functional disturbances within the body systems. Designed to meet the needs of students in certain allied health career programs. Knowledge of high school biology assumed. (NOTE: Not Lab science credit.)

### BIO 140 Animals and Society (3-3) 4 crs.

Emphasizes scientific inquiry through selected concepts in animal biology. Surveys the animal kingdom based on theory of organic evolution, including morphology, histology, physiology, taxonomy, parasitology, embryology and ecology. Economic, environmental and medical relationships between animals and humans are emphasized. (NOTE: Lab Science credit.) IAI L1 902L

### BIO 150 Field Biology (2-4) 4 crs.

Emphasizes field and laboratory work with soils, flora, fauna, their identification, ecological relationships and human impact upon ecosystems. Assists students in acquiring basic working knowledge in biological field work. Students should expect field work or a field trip every class day, weather permitting. Field trips may be to local, regional or international locations which may vary from year to year. (See specific section for field trip focus.) Classes are held on campus prior to the off-campus learning experience as scheduled. Travel expenses are paid for by the student. This course may be repeated up to a maximum of 8 credit hours if field trip focus is different. Knowledge of high school biology is assumed; permission to register required. (NOTE: Lab science credit.)

### BIO 160 Human Anatomy (3-2) 4 crs.

Introduces the anatomy of the human body; the following systems studied either regionally or systemically: integumentary, skeletal, articular, muscular, circulatory, lymphatic, nervous, respiratory, digestive, excretory, endocrine and reproductive. Includes some introductory histology. Specially designed for students in health careers, biology, and physical education. Strongly recommended preparation: One year of high school biology with a grade of C or better taken within the last five years, or BIO 110. (NOTE: Lab science credit.)

**Prerequisite:** Placement into ENG 101. [https://www.harpercollege.edu/registration/testing/pdf/ENG\\_Placement\\_Grid.pdf](https://www.harpercollege.edu/registration/testing/pdf/ENG_Placement_Grid.pdf)

**BIO 161 Human Physiology (3-2) 4 crs.**

Emphasizes physiological principles at the molecular, cellular, tissue, organ and system level, as they pertain to the human organism. The following systems are studied in detail: skeletal, muscular, circulatory, nervous, digestive, respiratory, urinary, reproductive and endocrine. In this course, special applications will be made to meet the needs of students in health careers, biology and physical education. (NOTE: Lab science credit.)

**Prerequisite:** BIO 160 with a grade of C or better, or consent of instructor.

**BIO 295 Independent Research in Biology I (0-3 to 0-9) 1-3 crs.**

Provides experimental exploration of a scientific research topic under the supervision of a faculty member. This laboratory course is designed to teach the principles and practice of experimental Biology in an area of both student interest and faculty expertise. Before registering, students must submit to the Biology Department a contract with the instructor for accomplishing a defined research task. Credit is contingent on the submission of a final report.

**Prerequisite:** BIO 110 or BIO 115 with a grade of C or better, prior consultation with instructor, completed contract, and consent of department chair.

**BIO 296 Independent Research in Biology II (0-3 to 0-9) 1-3 crs.**

Provides additional opportunity for students to do experimental exploration of a scientific research topic under the supervision of a faculty member. This laboratory course is designed to give students more time to work on a research project. Before registering, students must submit to the Biology Department a contract with the instructor for accomplishing a defined research task. Credit is contingent on the submission of a final report.

**Prerequisite:** BIO 295 with a grade of B or better, prior consultation with instructor, completed contract, and consent of department chair.

**BIO 297 Independent Research in Biology III (0-3 to 0-9) 1-3 crs.**

Provides additional opportunity for students to do experimental exploration of a scientific research topic under the supervision of a faculty member. This laboratory course is designed to give students more time to work on a research project. Before registering, students must submit to the Biology Department a contract with the instructor for accomplishing a defined research task. Credit is contingent on the submission of a final report.

**Prerequisite:** BIO 296 with a grade of B or better, prior consultation with instructor, completed contract, and consent of department chair.