

BIOLOGY (BIOL)

BIOL 004A General Principles and Cell Biology 5 Units

Students will explore the scientific method, biochemistry, cell structure and function, bioenergetics, cell reproduction, Mendelian inheritance, molecular genetics, biotechnology, evolution of the genome, and some biochemical laboratory techniques for proteins and DNA. Biology 004A is a lecture lab course and the first of a two-term sequence for students interested a career in the sciences, teaching, medicine, or biochemistry. Field trips may be required. (C-ID BIOL 190 and BIOL 135S when combined with BIOL 004B)

Lecture Hours: 3 Lab Hours: 6 Repeatable: No Grading: L
Prerequisite: CHEM 001A or CHEM 001AH with C or better, and Intermediate Algebra or appropriate placement beyond Intermediate Algebra.

Advisory Level: Read: 3 Write: 3 Math: None

Transfer Status: CSU/UC Degree Applicable: AA/AS

For General Education (GE) information, please refer to assist.org (<https://assist.org>) or consult a counselor.

BIOL 004B Biodiversity and Organismal Biology 5 Units

Biology 004B is the second course in a two-term sequence for students preparing for careers in the sciences, including the health sciences, biochemistry, research, and teaching. Students will study the basic biology and diversity of unicellular and multicellular organisms by emphasizing evolutionary theory, Earth history, phylogeny, form and function/adaptation, physiology, and ecology of life on Earth. Field studies may be required. (C-ID BIOL 140 and BIOL 135S when combined with BIOL 004A)

Lecture Hours: 3 Lab Hours: 6 Repeatable: No Grading: L
Prerequisite: BIOL 004A with C or better

Advisory Level: Read: 4 Write: 4 Math: None

Transfer Status: CSU/UC Degree Applicable: AA/AS

For General Education (GE) information, please refer to assist.org (<https://assist.org>) or consult a counselor.

BIOL 020 Human Biology 4 Units

Students will be introduced to the principles of human biology covering all systems of the body including structure and function, diseases, and application of biotechnology. The course is intended for non-science majors.

Lecture Hours: 3 Lab Hours: 3 Repeatable: No Grading: L
Advisory Level: Read: 3 Write: 3 Math: 2

Transfer Status: CSU/UC Degree Applicable: AA/AS

For General Education (GE) information, please refer to assist.org (<https://assist.org>) or consult a counselor.

BIOL 020H Honors Human Biology 4 Units

Students will be introduced to the principles of human biology covering all systems of the body including structure and function, diseases, and application of biotechnology. The course is intended for non-science majors. The Honors course will be enhanced in the following ways: (1) The lecture component of this course will require that students complete a set of selected readings pertinent to concepts covered in class, from peer reviewed journals, such as American Journal of Human Biology, Human Biology, Wayne State University Press. Critical analysis of these readings is expected and the students will be evaluated with extra questions during the regular examinations of the course. (2) The lecture component of this course will require that students apply higher-order thinking by using their knowledge of Human Biology to analyze current events. (3) The laboratory component of this course will require that students apply concepts covered in lecture to analytical methods. (4) The laboratory component of this course will require that students develop a hypothesis and conduct a scientific inquiry and present their findings in an oral or poster presentation.

Lecture Hours: 3 Lab Hours: 3 Repeatable: No Grading: L

Advisory Level: Read: 4 Write: 4 Math: 3

Transfer Status: CSU/UC Degree Applicable: AA/AS

For General Education (GE) information, please refer to assist.org (<https://assist.org>) or consult a counselor.

BIOL 021 General Biology 4 Units

Students will study the general principles and basic concepts of biology. The course includes the characterization of and classification of living systems, the cell, metabolism, development, genetics, evolution, ecology, dissection, and human health and reproduction. This is an introductory course for non-science majors. This course is not designed for biology or related pre-professional majors, except as a prerequisite for other biology courses.

Lecture Hours: 3 Lab Hours: 3 Repeatable: No Grading: L

Advisory Level: Read: 4 Write: 4 Math: 2

Transfer Status: CSU/UC Degree Applicable: AA/AS

For General Education (GE) information, please refer to assist.org (<https://assist.org>) or consult a counselor.

BIOL 061 Human Heredity 3 Units

Students will study the importance of human heredity in our lives, emphasizing the rapidly changing areas of human heredity and specific genetic disorders. The course includes the role of genetics in medicine, agriculture, and recombinant DNA Technology, and will explore the role and importance of genetic counselors and the genetic tests for disorders. This course is designed for non-science majors.

Lecture Hours: 3 Lab Hours: None Repeatable: No Grading: L

Advisory Level: Read: 3 Write: 3 Math: 2

Transfer Status: CSU/UC Degree Applicable: AA/AS

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BIOL 062 Plants and Human Welfare 3 Units

Students are introduced to the world of plants and their ecological importance to humans. Topics include the impact of plants on development of civilizations; the need for conservation; and the role of plants in the total environment. Class meetings may be held at alternative off campus sites.

Lecture Hours: 3 Lab Hours: None Repeatable: No Grading: L
 Advisory Level: Read: 3 Write: 3 Math: 2
 Transfer Status: CSU/UC Degree Applicable: AA/AS
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BIOL 063 Ecology 3 Units

Students will study organisms, matter, and energy and their relationships to natural cycles, succession, and conservation. They will analyze environmental crises in the world today using ecological principles. This is a general Biology science course designed for students not majoring in Biology.

Lecture Hours: 3 Lab Hours: None Repeatable: No Grading: L
 Advisory Level: Read: 4 Write: 4 Math: 2
 Transfer Status: CSU/UC Degree Applicable: AA/AS
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BIOL 064 Marine Biology 4 Units

Students will investigate animals, plants, microorganisms, plankton, and human impact on marine ecosystems. In addition, physical factors of the sea, human oceanic history, technology, and uses of the sea will be considered. Mariculture, energy production, and fisheries biology are also addressed. Students will also study special topics on tropical habitats, shark biology, whaling operations, and local marine habitats. Field trips will be required to locations such as San Francisco Bay and Monterey Bay.

Lecture Hours: 3 Lab Hours: 3 Repeatable: No Grading: L
 Advisory Level: Read: 3 Write: 3 Math: 3
 Transfer Status: CSU/UC Degree Applicable: AA/AS
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BIOL 071 Human Anatomy 5 Units

Students will study the structure of the human body: identifying its parts and systems, understanding interrelationships between the parts and systems, and making clinical applications. Laboratory activity includes the study of models, dissection of a human cadaver and other selected mammalian organs, and use of the microscope. This course is primarily intended for pre-professional majors such as Nursing, Allied Health, Kinesiology, Occupational Therapy, Physical Therapy, Respiratory Therapy, Chiropractic, and other health-related majors. (C-ID BIOL 110B)

Lecture Hours: 3 Lab Hours: 6 Repeatable: No Grading: L
 Prerequisite: BIOL 004A or BIOL 020 or BIOL 021; all with C or better or an AP Biology Exam Score of 3 or higher.
 Advisory Level: Read: 3 Write: 3 Math: 3
 Transfer Status: CSU/UC Degree Applicable: AA/AS
 For General Education (GE) information, please refer to assist.org (<https://assist.org>) or consult a counselor.

BIOL 072 Human Physiology 5 Units

Students will explore the different body systems (e.g. nervous, endocrine, muscular, urinary, respiratory, cardiovascular, reproductive) along with cellular physiology and metabolism. Students will learn to apply physiology in the context of disease, including learning to answer questions like: If you pull someone's heart out of their chest, why does the heart keep beating? Why is 0.9% NaCl often the IV of choice in hospitals? Why is it dangerous to drink too much water too fast? Why do you feel dizzy when you stand up? This course is designed for college degrees in nursing, physical and occupational therapy, and certain science and preprofessional majors.

Lecture Hours: 4 Lab Hours: 3 Repeatable: No Grading: L
 Prerequisite: BIOL 071 and (CHEM 001A or CHEM 001AH or CHEM 015 or CHEM 015H or CHEM 032A); all with C or better. And Intermediate Algebra or appropriate placement beyond Intermediate Algebra.
 Advisory Level: Read: 3 Write: 3 Math: None
 Transfer Status: CSU/UC Degree Applicable: AA/AS
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BIOL 074 General Microbiology 5 Units

Students are introduced to the structure and activities of microorganisms, including bacteria, viruses, protozoa, fungi, helminths, and algae. Students will study the principles of microbial control, metabolism, environmental microorganism genetics, genetic engineering, disease, modes of infection, and immunity. Emphasis is on aseptic laboratory technique and the application of microbiology to human welfare.

Lecture Hours: 3 Lab Hours: 6 Repeatable: No Grading: L
 Prerequisite: CHEM 001A or CHEM 015 or CHEM 032A and BIOL 071 or BIOL 072; with C or better
 Advisory Level: Read: 3 Write: 3 Math: 3
 Transfer Status: CSU/UC Degree Applicable: AA/AS
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BIOL 098 Directed Study in Biology 0.5-9 Units

Individual or small groups of students who would benefit from Independent Study under the direction of faculty members in specific or related disciplines may develop individualized learning contracts designed to enhance their individual instructional Individual or small groups of students, with previous course work in the discipline, who would benefit from Independent Study under the direction of faculty members in specific or related disciplines, may develop individualized learning contracts designed to enhance their individual instructional programs. The students and the faculty member in consultation with the Division Dean will determine appropriate learning objectives and activities as well as the numbers of units to be earned. Instructions and the Learning Contract forms are available in the Division Office. Repeatable to a maximum of 9 units across all disciplines.

Lecture Hours: None Lab Hours: 2.07 Repeatable: Yes Grading: O
 Prerequisite: BIOL 020 or BIOL 021 or BIOL 004A with C or better
 Advisory Level: Read: 3 Write: 3 Math: None
 Transfer Status: CSU Degree Applicable: AA/AS
 For General Education (GE) information, please refer to assist.org (<https://assist.org>) or consult a counselor.