

Biology Course Listing

BIOL 1106 General Biology I Laboratory (1)

Laboratory methods in the biological sciences, directed toward the structure and function of the cell. Corequisite: BIOL 1306. Fall, Spring

BIOL 1107 General Biology II Laboratory (1)

Laboratory methods for the study of the structure, function, and the environment of organisms. Corequisite: BIOL 1307. Fall, Spring

BIOL 1108 Biology for Non-Science Majors Laboratory (1)

The laboratory will provide practical and interactive experiments and demonstrations of concepts covered in BIOL 1308. Biology majors and minors cannot substitute BIOL 1108 for either BIOL 1106 or 1107. BIOL 1108 cannot be used as a prerequisite for any upper-level biology course. Corequisite: BIOL 1308. Fall, Spring

BIOL 1306 General Biology I (3)

Introduction to the biological sciences, with emphasis on the structure, function, and physiology of the cell: genetics and bioenergetics. The first of the two-semester freshman biology sequence for Biology majors and minors, and all disciplines that require the majors Biology sequence, although students of all majors may take it to fulfill general education science requirements. No prerequisites. Corequisite: BIOL 1106. Fall, Spring

BIOL 1307 General Biology II (3)

Introduction to the biological sciences, with the emphasis on the biology of organisms, their evolution, and the environment. The second of the two-semester freshman biology sequence for Biology majors and minors, and all disciplines that require the majors Biology sequence, although students of all majors may take it to fulfill general education science requirements. Prerequisite(s): Students must pass BIOL 1306/1106 with at least a C. Corequisite: BIOL 1107. Fall, Spring

BIOL 1308 Biology for Non-Science Majors (3)

A survey of the fundamental principles that apply to living organisms. These include cell structure and function, genetics, evolution, physiology, biodiversity, and ecology. Biology majors and minors cannot substitute BIOL 1308 for either BIOL 1306 or 1037. BIOL 1308 cannot be used as a prerequisite for any upper-level biology course. No prerequisites. Corequisite: BIOL 1108. Fall, Spring

BIOL 2121 Introductory Microbiology Laboratory (1)

An introduction to the basic techniques used to study and identify microorganisms. For Nursing majors; will not be accepted for Biology major or minor, nor to meet undergraduate prerequisites for medical or any other doctoral- granting school. Corequisite: BIOL 2320. Fall, Spring

BIOL 2320 Introductory Microbiology (3)

An introduction to microbiology with emphasis on microbial growth, diagnostics, infectious diseases caused by microorganisms, and host defenses. For Nursing majors; will not count toward Biology

major or minor, nor for undergraduate prerequisites for medical or other doctoral-granting professional schools. Prerequisite(s): BIOL 1306/1106, BIOL 1307/1107. Must pass the prerequisites with at least a C. Corequisite: BIOL 2121. Fall, Spring

BIOL 3101 Microbiology Lab (1)

Techniques for the study of microorganisms with special emphasis on disease causing bacteria. Corequisite: BIOL 3300. Spring

BIOL 3300 Microbiology (3)

Growth, genetics, morphology, metabolism and ecology of microorganisms, with emphasis on disease causing bacteria. Prerequisite(s): BIOL 1306/1106, BIOL 1307/1107, CHEM 1311/1111, CHEM 1312/1112, CHEM 3311/3113. Must pass the prerequisites with at least a C. Corequisite: BIOL 3101. Spring

BIOL 3196 Supervised Laboratory Teaching (1)

Upper-level undergraduates provide teaching assistance in General Biology or other designated Biology lab sections. The lab instructor supervises the student, establishes curricular duties (grading, etc.), and remains in charge of the lab as instructor of record. Good experience for students seeking teaching certification. Prerequisite(s): A grade of at least B in the lab course oneself, plus permission of supervising lab instructor. Fall, Spring.

BIOL 3197 Preprofessional Seminar (1)

This course provides a mechanism to disseminate information to students interested in doctoral-level professional programs, including opportunities for interactions, small group discussions, and visits by representatives of health science centers. No prerequisites. Fall

BIOL 3111 Invertebrate Zoology Laboratory (1)

Project-based collection and identification of invertebrates, with emphasis on local and regional species. Corequisite: BIOL 3310. Fall

BIOL 3310 Invertebrate Zoology (3)

A survey of the structure, function, ecology, and evolution of invertebrates. Prerequisites: BIOL 1306/1106, 1307/1107. Must pass the prerequisites with at least a C. Corequisite: BIOL 3111. Fall

BIOL 3113 Vertebrate Zoology Laboratory (1)

Field course on identification and observation of native vertebrates (amphibians, mammals, "reptiles", and birds) found in West Texas and learning how to take field notes. Field trips to natural areas on campus and local nature preserves in the Odessa-Midland area. Prerequisite(s): BIOL 1306/1106, BIOL 1307/1107. Must pass prerequisites with at least a C. Corequisite: BIOL 3312. Spring

BIOL 3312 Vertebrate Zoology (3)

A survey of vertebrate diversity, with a particular emphasis on a phylogenetic approach to understanding vertebrate classification and evolution. Prerequisite(s): BIOL 1306/1106, BIOL 1307/1107. Must pass prerequisites with at least a C. Corequisite: BIOL 3113. Spring

BIOL 3125 Cell Biology Lab (1)

Laboratory investigation of cellular structure and function. Corequisite: BIOL 3324. Spring

BIOL 3324 Cell Biology

Structure and function of prokaryotic and eukaryotic cells. Topics include cell anatomy, physiology, bioenergetics, and membrane transport. Prerequisite(s): BIOL 1306/1106, BIOL 1307/1107, CHEM1311/111, CHEM 1312/1112, CHEM 3411/3113, MATH 2412. Must pass prerequisites with at least a C. Corequisite: BIOL 3125. Spring

BIOL 3231 Botany Lab (2)

Morphology and taxonomy of the major plant groups. Corequisite: BIOL 3230. Spring

BIOL 3230 Botany (2)

Structure, development, taxonomy, and physiology of the major plant groups. Prerequisite(s): BIOL 1306/1106, 1307/1107. Corequisite: BIOL 3231. Spring

BIOL 3151 Human Anatomy Laboratory (1)

Anatomy of tissues and organ systems of the human and cat. Corequisite(s): BIOL 3350. Fall, Spring

BIOL 3350 Human Anatomy (1)

The development, structures, and function of major human anatomical systems. Prerequisite(s): BIOL 1306/1106, BIOL 1307/1107. Must pass the prerequisites with at least a C. Corequisite: BIOL 3151. Fall, Spring

BIOL 3153 Survey of Human Physiology Laboratory (1)

Study of human body function using a variety of experimental techniques. Corequisite: BIOL 3352. Fall, Spring

BIOL 3352 Survey of Human Physiology (3)

An introduction to the function of human tissues, organs, and organ systems. Prerequisite(s): BIOL 1306/1106 and 1307/1107. Must pass the prerequisites with at least a C. Corequisite: BIOL 3153. Fall, Spring

BIOL 3372 Principles of Ecology (3)

An introduction to behavioral, population, community and ecosystems ecology including the impact of humans on ecosystem function. Prerequisite(s): BIOL 1306/1106, BIOL 1307/1107. Alternate years in the Spring

BIOL 3389 Multicourse Listing (3)

Undergraduate course being developed before the regular course is listed in the catalog.

BIOL 4303 Principles of Nutrition (3)

Nutritional roles of carbohydrates, proteins, lipids, minerals, vitamins and water in humans with emphasis on digestion, absorption, metabolism and excretion of the nutrients and their metabolites. Nutrition as it relates to human health and medicine is emphasized. Prerequisite(s): BIOL 1306/1106, BIOL 1307/1107, CHEM 1311/1111, CHEM 1312/1112, CHEM 3311/3113. Must pass the prerequisites with at least a C. Fall

BIOL 4320 Biochemistry (3)

A survey of the biochemical basis of life processes, structure, and function of cell components and biologically important molecules, enzyme kinetics, bioenergetics, respiration, and reductive biosynthesis. Prerequisite(s): BIOL 1306/1106, BIOL 1307/1107, CHEM 1311/1111, CHEM 1312/1112, CHEM 3311/3113, CHEM 3312/3114. Must pass prerequisites courses with at least a C. BIOL 3300/3101 or BIOL 3324/3125 are recommended. Fall

BIOL 4322 Molecular Biology (3)

An introduction to key concepts in molecular biology. Topics include DNA structure and function, DNA replication and repair, regulation of gene expression, protein structure and function, and molecular techniques utilized for nucleic acid and protein purification and manipulation. Prerequisite(s): BIOL 1306/1106, BIOL 1307/1107, CHEM 1311/1111, CHEM 1312/1112. Must pass the prerequisites with at least a C. Fall

BIOL 4323 Immunology (3)

Structure and function of the mammalian immune system. Prerequisite(s): BIOL 1306/1106, 1307/1107, CHEM 1311/1111, 1312/1112. Must pass prerequisites with at least a C. Offered alternate years. Spring

BIOL 4141 Genetics Laboratory (1)

Laboratory experiences in the manipulation of genetic systems and interpretation of data. Required for biology majors on the Preprofessional degree plans. Not required for Biology Minors or students on the General Studies degree plan or students seeking teacher certification. Prerequisite or corequisite: BIOL 4340. Fall, Spring

BIOL 4340 Genetics (3)

Overview of genetic principles, emphasizing transmission and molecular genetics. Prerequisites: BIOL 1306/1107, 1307/1107, 6 hours of upper-level biology coursework, all passed with a C or better. Corequisite: BIOL 4340R, Genetics Recitation. Fall, Spring

BIOL 4342 Evolution (3)

Introduction to evolutionary biology, including evidence for evolution, natural selection, genetic drift, sexual selection, phylogenetics, genome evolution, speciation, macroevolution, the history of life on Earth, and the evolution of infectious disease. Prerequisite or corequisite: BIOL 4340. Fall, Spring

BIOL 4153 Principles of Physiology Lab (1)

Theory and practice of various techniques used in physiology: Corequisite: BIOL 4352. Spring.

BIOL 4352 Principles of Physiology (3)

An examination of the major physiological systems in humans, with emphasis on the chemical and physical principles that govern their function. Prerequisite(s): BIOL 1306/1106, BIOL 1307/1107, CHEM 1311/1111, CHEM 1312/1112, PHYS 1301/1101, 1302/1102 or 2325/2125 and 2326/2126. Must pass the prerequisites with at least a C. Corequisite: BIOL 4153. Spring

BIOL 4362 Histology (3 sch)

Microscopic representation of cells and tissues of different organ systems of the human body, with emphasis on structure and function. Prerequisite(s): BIOL 3324 or permission of the instructor. Offered alternate years. Fall

BIOL 4354 Animal Behavior (3)

Introduction to the principles of animal behavior, including ecological, evolutionary and genetic aspects. Prerequisite(s): BIOL 1306/1106, BIOL 1307/1107. Must pass prerequisites with at least a C. Offered in alternate years. Fall

BIOL 4395 Bioresearch (3)

Individual undergraduate research directed by a faculty member of Biology. May be taken for 1, 2, or 3 hours of credit. Prerequisite(s): Consent of directing faculty is required. Fall, Spring

NTSC 4311 History and Philosophy of Science (both fall and spring semesters) (3 sch)

Historical and philosophical development of science from Classical Greece to modern times. The capstone course for students majoring in the science and mathematics majors. Prerequisite(s): one year of natural science with laboratory, one year of mathematics.