

Biology Courses

Courses

BIOL 1103. Introductory Biology Lab.

Introductory Biology Laboratory: Elementary aspects of evolution, physiology, development, genetics, and ecology in plants and animals. Concurrent enrollment in BIOL 1203 or BIOL 1303 is recommended. Course fee required. [Common Course Number BIOL 1108]

Department: Biology

1 Credit Hour

2 Total Contact Hour

2 Lab Hour

0 Lecture Hour

0 Other Hour

Prerequisite(s): (BIOL 1303 w/C or better) OR (BIOL 1203 w/C or better)

BIOL 1104. Human Biology Laboratory.

Human Biology Laboratory: Exercises and computer simulations of development, physiology, and heredity in humans. Concurrent enrollment in BIOL 1304 is recommended. Course fee required. [Common Course Number BIOL 1109]

Department: Biology

1 Credit Hour

2 Total Contact Hour

2 Lab Hour

0 Lecture Hour

0 Other Hour

BIOL 1107. Topics in Study of Life I.

Topics in the Study of Life: Elementary aspects of cell structure, function, and genetics. Concurrent enrollment with BIOL 1305 is recommended. Course fee required. [Common Course Number BIOL 1106]

Department: Biology

1 Credit Hour

2 Total Contact Hour

2 Lab Hour

0 Lecture Hour

0 Other Hour

BIOL 1108. Organismal Biology Laboratory.

Organismal Biology Laboratory: Laboratory experiments and observation on plants, animals, and fungi. BIOL 1306 may be taken concurrently with BIOL 1108. [Common Course Number BIOL 1107]

Department: Biology

1 Credit Hour

2 Total Contact Hour

2 Lab Hour

0 Lecture Hour

0 Other Hour

Prerequisite(s): (BIOL 1306 w/C or better)

BIOL 1203. Introductory Biology.

(Common Course Number BIOL 1208) Principles of cell and organismal physiology, inheritance and genetics, and for IDST students, elementary education, and other non-science majors. Co-requisite: BIOL 1103.

Department: Biology

2 Credit Hours

2 Total Contact Hours

0 Lab Hours

2 Lecture Hours

0 Other Hours

Prerequisite(s): (BIOL 1103 w/C or better)

BIOL 1303. Introductory Biology (C).

Introductory Biology: Evolution and ecology, biotic diversity, and an introduction to principles of cell biology for IDST students and other non-science majors. [Common Course Number BIOL 1308]

Department: Biology

3 Credit Hours

3 Total Contact Hours

0 Lab Hours

3 Lecture Hours

0 Other Hours

Prerequisite(s): (BIOL 1103 w/C or better)

BIOL 1304. Human Biology.

Human Biology: Introduction to the physiology reproduction, development, and heredity of humans. Recommended for students in social work and other non-science majors. [Common Course Number BIOL 1309]

Department: Biology

3 Credit Hours

3 Total Contact Hours

0 Lab Hours

3 Lecture Hours

0 Other Hours

BIOL 1305. General Biology.

General Biology: A molecular approach to the principles of biology emphasizing cell biology and genetics. Prerequisite to upper level biology courses. MATH 0311 or an adequate score on a placement examination. BIOL 1107 may be taken concurrently with BIOL 1305. [Common Course Number BIOL 1306]

Department: Biology

3 Credit Hours

3 Total Contact Hours

0 Lab Hours

3 Lecture Hours

0 Other Hours

Prerequisite(s): (BIOL 1107 w/C or better) AND (MATH 0311 w/C* or better) OR (MATH 1319 w/C or better) OR (MATH 1320 w/C or better) OR (MATH 1508 w/C or better) OR (MATH 2301 w/C or better) OR (MATH 1411 w/C or better) OR (MATH 1312 w/C or better) OR (MATH 2313 w/C or better) OR (MATH 2326 w/C or better) OR (BANM score between 3 and 5) OR (MATH 0311 w/S* or better) OR (ACCL score between 051 and 120 AND BANM score between 3 and 5) OR (BANM score between 3 and 5 AND EPCM score between 051 and 120) OR (BANM score between 3 and 5 AND MAPM score between 714 and 725) OR (BANM score between 3 and 5 AND MATE score between 36 and 48) OR (BANM score between 3 and 5 AND TAKM score between 2200 and 2900) OR (MATH 1411A w/C or better AND MATH 1411B w/C or better AND MATH 1411C w/C or better) OR (MATH 1508A w/C or better AND MATH 1508B w/C or better AND MATH 1508C w/C or better) OR (MDM2 score of Y) OR (MATH 0120 w/C or better AND ACCL score between 035 and 120) OR (MATH 0120 w/C or better AND MAPM score between 613 and 725) OR (MATH 0120 w/C or better AND MATE score between 26 and 48) OR (STAT 1380 w/C or better) OR (NCBM M021 w/S* or better) OR (TSIM score of 350) OR (SXDG score of 1) OR (SXMA score of 1) OR (SXMN score of 1) OR (SXOI score of 1) OR (SXTR score of 1) OR (S02 score between 500 and 800 AND S05 score between 1070 and 1600) OR (A02 score between 19 and 36 AND A05 score between 23 and 36) OR (STRM score between 4000 and 6396) OR (CPMA score of 1) OR (NCBM M011 w/S* or better) OR (MATH 1310 w/C or better) OR (2TSM score of 950) OR (2TDM score of 6 AND 2TSM score between 910 and 949) OR (S12 score between 530 and 800)

BIOL 1306. Organismal Biology.

Organismal Biology: Principles of structure and function at the organismal level; survey of biodiversity in plants, animals, and fungi. BIOL 1108 may be taken concurrently with BIOL 1306. [Common Course Number BIOL 1307]

Department: Biology

3 Credit Hours

3 Total Contact Hours

0 Lab Hours

3 Lecture Hours

0 Other Hours

Prerequisite(s): (BIOL 1305 w/C or better) AND (BIOL 1107 w/C or better) AND (MATH 0311 w/C* or better) OR (MATH 1319 w/C or better) OR (MATH 1320 w/C or better) OR (MATH 1508 w/C or better) OR (MATH 2301 w/C or better) OR (MATH 1411 w/C or better) OR (MATH 1312 w/C or better) OR (MATH 2313 w/C or better) OR (MATH 2326 w/C or better) OR (BANM score between 3 and 5) OR (MATH 0311 w/S* or better) OR (ACCL score between 051 and 120 AND BANM score between 3 and 5) OR (BANM score between 3 and 5 AND EPCM score between 051 and 120) OR (BANM score between 3 and 5 AND MAPM score between 714 and 725) OR (BANM score between 3 and 5 AND MATE score between 36 and 48) OR (BANM score between 3 and 5 AND TAKM score between 2200 and 2900) OR (MATH 1411A w/C or better AND MATH 1411B w/C or better AND MATH 1411C w/C or better) OR (MATH 1508A w/C or better AND MATH 1508B w/C or better AND MATH 1508C w/C or better) OR (MDM2 score of Y) OR (MATH 0120 w/C or better AND ACCL score between 035 and 120) OR (MATH 0120 w/C or better AND MAPM score between 613 and 725) OR (MATH 0120 w/C or better AND MATE score between 26 and 48) OR (STAT 1380 w/C or better) OR (NCBM M021 w/S* or better) OR (TSIM score of 350) OR (SXDG score of 1) OR (SXMA score of 1) OR (SXMN score of 1) OR (SXOI score of 1) OR (SXTR score of 1) OR (S02 score between 500 and 800 AND S05 score between 1070 and 1600) OR (A02 score between 19 and 36 AND A05 score between 23 and 36) OR (STRM score between 4000 and 6396) OR (CPMA score of 1) OR (NCBM M011 w/S* or better) OR (MATH 1310 w/C or better) OR (2TSM score of 950) OR (2TDM score of 6 AND 2TSM score between 910 and 949) OR (S12 score between 530 and 800)

BIOL 2111. Human Anat/Physio Lab I.

Human Anatomy and Physiology Lab I (0-2) (C) Computer simulations and laboratory exercises in human anatomy and physiology with emphasis on the skeletal, muscular, and nervous systems. Prerequisite: BIOL 2311 with a grade of "C" or better. BIOL 2311 may be taken concurrently with BIOL 2111.

Course fee required.

Department: Biology

1 Credit Hour

2 Total Contact Hour

2 Lab Hour

0 Lecture Hour

0 Other Hour

Prerequisite(s): (BIOL 2311 w/C or better)

BIOL 2113. Human Anat/Physio Lab II.

Human Anatomy/Physiology Lab (0-2) (C) Computer simulations and laboratory exercises in human anatomy and physiology with emphasis on homeostatic systems. Prerequisite: BIOL 2313 with a grade of "C" or better. BIOL 2313 may be taken concurrently with BIOL 2113. Course fee required.

Department: Biology

1 Credit Hour

2 Total Contact Hour

2 Lab Hour

0 Lecture Hour

0 Other Hour

Prerequisite(s): (BIOL 2313 w/C or better)

BIOL 2311. Human Anat/Physiology I.

Human Anatomy/Physiology I (3-0) (C) Biological molecules, body organization, and correlated structure and function of the human skeletal, integumentary, muscular, and nervous system. Prerequisites: BIOL 1305 and BIOL 1107 each with a grade of "C" or better, or ZOOL 2406. BIOL 2111 may be taken concurrently with BIOL 2311. Normally taught Spring semester only.

Department: Biology

3 Credit Hours

3 Total Contact Hours

0 Lab Hours

3 Lecture Hours

0 Other Hours

Prerequisite(s): (BIOL 1107 w/C or better AND BIOL 1305 w/C or better) OR (ZOOL 2406 w/D or better)

BIOL 2313. Human Anat/Physiology II.

Human Anatomy/Physiology II (3-0) (C) Correlated structure and function of the human cardiovascular, respiratory, digestive, urinary, reproductive, endocrine and immune systems. Prerequisites: BIOL 1305 and BIOL 1107 or ZOO 2406, each with a grade of "C" or better. BIOL 2113 may be taken concurrently with BIOL 2313. Normally taught Fall semester only.

Department: Biology

3 Credit Hours

3 Total Contact Hours

0 Lab Hours

3 Lecture Hours

0 Other Hours

Prerequisite(s): (BIOL 1107 w/C or better AND BIOL 1305 w/C or better) OR (ZOO 2406 w/C or better)

BIOL 2340. Introductory Neuroscience.

Introductory Neuroscience This course will provide a broad introduction to the nervous system, beginning with the study of neurons, nerve impulses, and information transfer between cells. Sensory and motor systems, neuroendocrine integration, and motivation, emotion, learning, and sleep will then be covered. This new course will provide critical background knowledge for upper division neuroscience courses in Biological Sciences and Psychology, and will support students pursuing careers in neuroscience research, medicine or the allied health fields, or education. Students will demonstrate effective teamwork, oral and written communication, quantitative skills, and critical thinking abilities.

Department: Biology

3 Credit Hours

3 Total Contact Hours

0 Lab Hours

3 Lecture Hours

0 Other Hours

Prerequisite(s): (BIOL 1107 w/C or better AND BIOL 1305 w/C or better) OR (BIOL 1108 w/C or better AND BIOL 1306 w/C or better) OR (PSYC 1301 w/C or better)

BIOL 3115. Molecular Cell Biol Laboratory.

Experimental studies in cell and molecular biology. Prerequisites: BIOL 2340/2141 or 2440. Course fee required.

Department: Biology

1 Credit Hour

3 Total Contact Hour

3 Lab Hour

0 Lecture Hour

0 Other Hour

Prerequisite(s): (MICR 2141 w/C or better AND MICR 2340 w/C or better) OR (MICR 2440 w/C or better)

BIOL 3117. Ecology Laboratory.

Experimental studies in Ecology. Prerequisites: BIOL 1306-1108 MATH 1411 recommended. Course fee required.

Department: Biology

1 Credit Hour

3 Total Contact Hour

3 Lab Hour

0 Lecture Hour

0 Other Hour

Prerequisite(s): (BIOL 1108 w/C or better AND BIOL 1306 w/C or better)

BIOL 3192. Professional Development Sem..

Preparation for postgraduate study or careers for majors in Biological Sciences, Microbiology, or Cellular and Molecular Biochemistry. Prerequisites: completion of all lower- division coursework in math and sciences required for B.S. or B.A. in Biological Sciences or the B.S. in Microbiology or Cellular and Molecular Biochemistry. Completion of at least six credit hours of upper division coursework in the major strongly recommended. Prerequisites: BIOL 1305-1107 AND BIOL 1306-1108 AND CHEM 1305-1105 AND CHEM 1306-1106 AND (MATH 1411 OR MATH 1312 OR STAT 2480) with a grade of C or better. Restricted to Majors of Biology, Microbiology and Cellular and Molecular Biochemistry. Restricted to class of Junior, Senior.

Department: Biology

1 Credit Hour

1 Total Contact Hour

0 Lab Hour

1 Lecture Hour

0 Other Hour

Prerequisite(s): (BIOL 1107 w/C or better AND BIOL 1305 w/C or better) AND (BIOL 1108 w/C or better AND BIOL 1306 w/C or better) AND (CHEM 1105 w/C or better AND CHEM 1305 w/C or better) AND (CHEM 1106 w/C or better AND CHEM 1306 w/C or better) AND (MATH 1411 w/C or better) OR (MATH 1312 w/C or better) OR (STAT 2480 w/C or better)

BIOL 3314. Molecular Cell Biology.

Molecular Cell Biology (3-3) Biochemical and ultrastructural study of cells, including gene regulation, cell signaling, membrane transport, conduction, and contraction. Prerequisites: MICR 2340/2141 or 2440; MATH 1508 and CHEM 1306 or 1408. MATH 1508 and CHEM 1306 or 1408 may be taken concurrently with BIOL 3314.

Department: Biology

3 Credit Hours

3 Total Contact Hours

0 Lab Hours

3 Lecture Hours

0 Other Hours

Prerequisite(s): (MICR 2141 w/C or better AND MICR 2340 w/C or better) OR (MICR 2440 w/C or better) AND (CHEM 1306 w/D or better) OR (CHEM 1408 w/D or better) AND (MATH 1508 w/C or better) OR (MATH 1411 w/C or better) OR (MATH 2301 w/C or better) OR (MATH 1312 w/C or better) OR (MATH 2313 w/C or better) OR (MATH 2326 w/C or better) OR (BANM score between 4 and 5) OR (ACCL score between 081 and 120 AND BANM score between 4 and 5) OR (BANM score between 4 and 5 AND EPCM score between 081 and 120) OR (MATH 1411A w/C or better AND MATH 1411B w/C or better AND MATH 1411C w/C or better) OR (MATH 1508A w/C or better AND MATH 1508B w/C or better AND MATH 1508C w/C or better) OR (SXDG score of 1) OR (SXMA score of 1) OR (SXMN score of 1) OR (SXOI score of 1) OR (SXTR score of 1) OR (MATH 1310 w/C or better)

BIOL 3316. Ecology.

Ecology (3-3) Interactions between populations of organisms and their environments at community and ecosystem levels. Prerequisites: BIOL 1306-1108 MATH 1411 recommended.

Department: Biology

3 Credit Hours

3 Total Contact Hours

0 Lab Hours

3 Lecture Hours

0 Other Hours

Prerequisite(s): (BIOL 1108 w/C or better AND BIOL 1306 w/C or better)

Corequisite(s): BIOL3117

BIOL 3320. Genetics.

Genetics (3-0) The nature and functions of hereditary material with emphasis on the experimental procedures and data that have led to the current concepts in genetics. Prerequisites: BIOL 1305-1107 and BIOL 1306-1108.

Department: Biology

3 Credit Hours

3 Total Contact Hours

0 Lab Hours

3 Lecture Hours

0 Other Hours

Prerequisite(s): (BIOL 1108 w/D or better AND BIOL 1306 w/D or better) AND (BIOL 1107 w/D or better AND BIOL 1305 w/D or better)

BIOL 3321. Evolution.

Evolution (3-0) Development of evolutionary thought, evidences of evolution and evolutionary processes. Prerequisites: BIOL 3320 with a grade of "C" or better.

Department: Biology

3 Credit Hours

3 Total Contact Hours

0 Lab Hours

3 Lecture Hours

0 Other Hours

Prerequisite(s): (BIOL 3320 w/C or better)

BIOL 3330. Histology.

Histology (2-2) Survey of tissue structure at the light microscopic level, with emphasis on animal specimens and identification. Not a course in preparative technique. Prerequisites: ZOOL 2406 or BIOL 1306 and BIOL 1108 or BIOL 2311 or BIOL 2313. Course fee required.

Department: Biology

3 Credit Hours

4 Total Contact Hours

2 Lab Hours

2 Lecture Hours

0 Other Hours

Prerequisite(s): (ZOOL 2406 w/D or better) OR (BIOL 1108 w/D or better AND BIOL 1306 w/D or better) OR (BIOL 2311 w/D or better) OR (BIOL 2313 w/D or better)

BIOL 3342. Plants and People.

The role of plants in human culture, economics, technology and medicine. Prerequisites: (BIOL 1306-1108 with a grade of C or better) or permission of instructor. Restricted to class of Junior, Senior.

Department: Biology

3 Credit Hours

3 Total Contact Hours

0 Lab Hours

3 Lecture Hours

0 Other Hours

Classification Restrictions:

Restricted to class of JR,SR

Prerequisite(s): (BIOL 1108 w/C or better AND BIOL 1306 w/C or better)

BIOL 3351. Toxicology.

Toxicology: The study of interactions between foreign chemicals and biological systems, including the physiological, developmental, and genetic consequences of exposure of human beings to environmental contaminants and medications. Also treated is the scope of toxicology in forensic science, particularly through its role in interpretation of evidence. A course for non-majors that cannot count towards the major for any degree in Biology.

Department: Biology

3 Credit Hours

3 Total Contact Hours

0 Lab Hours

3 Lecture Hours

0 Other Hours

BIOL 3357. Forensic DNA Analysis.

Forensic DNA Analysis: Examination of the use of DNA analysis in law and medicine, including validity of the uses of these data, the analytical techniques used to identify specific genes and mutations in individuals, and statistical interpretation of DNA typing results. A course for non-majors that cannot count towards the major for any degree in Biology.

Department: Biology

3 Credit Hours

3 Total Contact Hours

0 Lab Hours

3 Lecture Hours

0 Other Hours

BIOL 3360. Quantitative Methods Ecology.

Analysis and interpretation of ecological and environmental data using current methods, programs and technologies. Prerequisites: BIOL 3416 OR BIOL 3117 AND BIOL 3316 with a grade of C or better OR permission of instructor. STAT 2480 recommended.

Department: Biology

3 Credit Hours

4 Total Contact Hours

2 Lab Hours

2 Lecture Hours

0 Other Hours

Prerequisite(s): (BIOL 3416 w/C or better) OR (BIOL 3117 w/C or better AND BIOL 3316 w/C or better)

BIOL 3375. Forensic Pathobiology.

Forensic Pathology The course provides the students with a broad-based understanding of forensic pathology including pathologic process, injury, or disease that results in or initiates the events that lead to death (mechanism of death), manner of death, examination of wound and injuries both at autopsy and occasionally in a clinical setting. The primary goal of the course is to provide a basic working knowledge for the interpretation of medical, pathological and biomedical facts and the circumstances surrounding unexplained or violent deaths. In addition, the role of related forensic science disciplines will be presented, with emphasis on forensic pathology which plays an important role in crime investigation by providing important pieces of information and valuable evidences.

Department: Biology

3 Credit Hours

3 Total Contact Hours

0 Lab Hours

3 Lecture Hours

0 Other Hours

Classification Restrictions:

Restricted to class of JR,SR

Prerequisite(s): (BIOL 1305 AND BIOL 1306) AND (CHEM 2324 AND CHEM 2325)

BIOL 3417. Plant Ecology.

Concepts, methods, technologies and research challenges in plant ecology. Prerequisites: BIOL 3316 AND BIOL 3117 with a grade of C or better. Strongly recommended: STAT 2480.

Department: Biology

4 Credit Hours

6 Total Contact Hours

3 Lab Hours

3 Lecture Hours

0 Other Hours

Prerequisite(s): (BIOL 3117 w/C or better AND BIOL 3316 w/C or better)

BIOL 3427. Desert Ecology.

Desert Ecology (3-3) Physical and biological characteristics of deserts, including behavioral and physiological adaptations of organisms to physical extremes, with emphasis on Chihuahuan desert organisms. Field trips and research projects are required. Prerequisites: BIOL 3316 and BIOL 3117 or department approval.

Department: Biology

4 Credit Hours

6 Total Contact Hours

3 Lab Hours

3 Lecture Hours

0 Other Hours

Prerequisite(s): (BIOL 3117 w/D or better AND BIOL 3316 w/D or better)

BIOL 4195. Advanced Methods in Biology.

Advanced Methods in Biology (0-3) Advanced investigational techniques in the biological sciences, to accompany selected sections of BIOL 4395. Co-requisite: BIOL 4395.

Department: Biology

1 Credit Hour

3 Total Contact Hour

3 Lab Hour

0 Lecture Hour

0 Other Hour

BIOL 4198. Special Problems.

Special Problems (0-0-2) Laboratory research conducted by advanced students. No more than 6 hours of 4198-4398 may be counted toward graduation. Course fee required.

Department: Biology

1 Credit Hour

2 Total Contact Hour

0 Lab Hour

0 Lecture Hour

2 Other Hour

BIOL 4225. Field Biology.

Field Biology (0-6) Collection and study of organisms under field conditions. Variable credit. No more than six hours of Field Biology may be counted toward degree. Prerequisite: Department approval. ZOOL 2466 recommended. Transportation fee varies according to destination of trip.

Department: Biology

2 Credit Hours

6 Total Contact Hours

6 Lab Hours

0 Lecture Hours

0 Other Hours

BIOL 4298. Special Problems.

Special Problems (0-0-4) Laboratory research conducted by advanced students. No more than six hours of 4198-4398 may be counted toward graduation. Course fee required.

Department: Biology

2 Credit Hours

4 Total Contact Hours

0 Lab Hours

0 Lecture Hours

4 Other Hours

BIOL 4315. Population Genetics.

Population Genetics: Broadly defined as the study of the genetic composition of populations, population genetics attempts to quantify the distribution of genetic variation and changes in the frequencies of alleles. Specifically, we will examine how the four evolutionary processes (mutation, genetic drift, natural selection, and gene flow) affect the genetic composition of natural populations. This includes how concepts in population genetics are advancing the field of Forensic Science. We will be exploring theoretical and practical components of population genetics through lectures and labs, respectively.

Department: Biology

3 Credit Hours

3 Total Contact Hours

0 Lab Hours

3 Lecture Hours

0 Other Hours

Prerequisite(s): (BIOL 1305 w/C or better AND BIOL 1306 w/C or better AND BIOL 3320 w/C or better) OR (BIOL 3321 w/C or better) AND (STAT 2480 w/C or better) OR (MATH 1312 w/C or better)

BIOL 4319. G Protein-Coupled Recept Biol.

G Protein-Coupled Receptor Biology The goal of this course is to help students learn how to thoughtfully discuss and write down their scientific ideas, in a comprehensive, organized manner. In addition to helping the students understand the interdisciplinary nature of the science background required to study signaling processes initiated through activation of G protein-coupled receptors, the course includes interactive lectures, oral presentations and exams.

Department: Biology

3 Credit Hours

3 Total Contact Hours

0 Lab Hours

3 Lecture Hours

0 Other Hours

BIOL 4320. Endocrinology.

Endocrinology (3-0) Study of the effects and actions of animal hormones, the physiology of hormone control systems, and basic endocrinology research methods. BIOL 3414 or BIOL 4388 or ZOOL 4380 is recommended, but may be taken concurrently. Prerequisites: BIOL 1305-1107 and CHEM 1306-1408 each with a grade of "C" or better.

Department: Biology

3 Credit Hours

3 Total Contact Hours

0 Lab Hours

3 Lecture Hours

0 Other Hours

Classification Restrictions:

Restricted to class of JR,SR

Prerequisite(s): (BIOL 1305 w/C or better) AND (BIOL 1107 w/C or better) AND (CHEM 1306 w/C or better) AND (CHEM 1408 w/C or better)

BIOL 4321. Developmental Biology.

Developmental Biology: This advanced course is designed for biology students who want to understand the molecular biology of development. We focus on mechanisms that regulate protein expression during embryogenesis in both plants and animals, and explore diseases and defects that occur as a result of inappropriate gene expression/regulation. Model organisms include humans, mice, *C. elegans*, and *Drosophila*. Graduate students enrolled in the course are expected to complete all course work in addition to a grant proposal pertaining to Developmental Biology.

Department: Biology

3 Credit Hours

3 Total Contact Hours

0 Lab Hours

3 Lecture Hours

0 Other Hours

Prerequisite(s): (BIOL 3314 w/C or better) OR (BIOL 4388 w/C or better)

BIOL 4324. Genetic, Env & Evol - Anim Beh.

Genetic, Environmental & Evolutionary Bases of Animal Behavior (3-0). Theories and experiments that elucidate the biological basis for the behavior of animals. Prerequisites: BIOL 1306 and BIOL 1108.

Department: Biology

3 Credit Hours

3 Total Contact Hours

0 Lab Hours

3 Lecture Hours

0 Other Hours

Prerequisite(s): (BIOL 1108 w/D or better AND BIOL 1306 w/D or better)

BIOL 4325. Field Biology.

Field Biology (0-9) Collection and study of organisms under field conditions. Variable credit. No more than six hours of field biology may be counted toward degree. Prerequisites: Instructor approval. Transportation/trip fee varies according to destination and duration of trip.

Department: Biology

3 Credit Hours

9 Total Contact Hours

9 Lab Hours

0 Lecture Hours

0 Other Hours

BIOL 4327. Animal Ecology.

Study of the structure and function of animal communities, emphasizing population dynamics, trophic patterns, and inter-specific interactions.

Prerequisites: BIOL 3416 and MATH 1411, each with a grade of "C" or better.

Department: Biology

3 Credit Hours

3 Total Contact Hours

0 Lab Hours

3 Lecture Hours

0 Other Hours

Classification Restrictions:

Restricted to class of JR,SR

Prerequisite(s): (BIOL 3416 w/C or better) OR (BIOL 3117 w/C or better AND BIOL 3316 w/C or better) AND (MATH 1411 w/C or better)

BIOL 4330. Cancer Biology.

Course will present an overview of the cancer development process at the cellular and molecular level. This course will discuss how academic research is helping us understand how cancers evolve, and how to treat them. Prerequisites: BIOL 1306, BIOL 3314, and MICR 2340 each with a grade of C or better.

Department: Biology

3 Credit Hours

3 Total Contact Hours

0 Lab Hours

3 Lecture Hours

0 Other Hours

Classification Restrictions:

Restricted to class of JR,SR

Prerequisite(s): (BIOL 1306 w/C or better AND BIOL 3314 w/C or better AND MICR 2340 w/C or better)

BIOL 4370. History/Philosophy-Biology.

History and Philosophy of Biology (3-0) Historical and philosophical dimensions of biology, as illustrated by selected themes such as Darwin and his critics, classical experiments in biology, evolutionary epistemology, and historical, controversies in biology. Prerequisites: BIOL 1306 and BIOL 1108.

Department: Biology

3 Credit Hours

3 Total Contact Hours

0 Lab Hours

3 Lecture Hours

0 Other Hours

Prerequisite(s): (BIOL 1108 w/D or better AND BIOL 1306 w/D or better)

BIOL 4375. Neuroscience Capstone.

Neuroscience Capstone: This course provides a project-based framework through which students may demonstrate and apply the knowledge gained throughout the interdisciplinary major in neuroscience. Taken during the final year of the curriculum, this course brings together critical concepts and ideas through discussion of previous coursework and experiences, and provides opportunities for skills development including critical thinking, synthesis and integration, resource identification and utilization, and communication through speaking and writing. In addition, this course will support the professional preparation of students for their future academic and career pursuits.

Department: Biology

3 Credit Hours

3 Total Contact Hours

0 Lab Hours

3 Lecture Hours

0 Other Hours

Major Restrictions:

Restricted to majors of NEUR

Classification Restrictions:

Restricted to class of SR

Prerequisite(s): (BIOL 2340 w/C or better) OR (PSYC 2324 w/C or better) AND (CHEM 2124 w/C or better AND CHEM 2324 w/C or better) AND (PSYC 3101 w/C or better AND PSYC 3201 w/C or better)

BIOL 4388. Mammalian Physiology.

Mammalian Physiology (3-0) Physiological and homeostatic mechanisms in mammals, with emphasis on Cardiovascular, respiratory, renal, digestive, and endocrine systems in mammals. Prerequisite: BIOL 2313 or BIOL 3414. ZOOL 4181 may be taken concurrently with BIOL 4388 to fulfill upper division physiology course requirements for some degrees and programs.

Department: Biology

3 Credit Hours

3 Total Contact Hours

0 Lab Hours

3 Lecture Hours

0 Other Hours

Prerequisite(s): (BIOL 2313 w/D or better) OR (BIOL 3414 w/D or better) OR (BIOL 3115 w/C or better AND BIOL 3314 w/C or better)

BIOL 4389. Developmental Neurobiology.

Developmental Neurobiology: The study of the mechanisms regulating normal nervous system development.

Department: Biology

3 Credit Hours

3 Total Contact Hours

0 Lab Hours

3 Lecture Hours

0 Other Hours

Prerequisite(s): (BIOL 3314 w/C or better)

Corequisite(s): BIOL3314

BIOL 4390. Biological Practicum.

Biological Practicum (0-6) Practical on-the-job experience in federal, state, city-county governmental and/or private agencies or industries. Prerequisites: Senior standing, minimum of 15 advanced hours in designated subject matter areas of biological sciences necessary for job experience and department approval. No more than six hours of BIOL 4390 and/or BIOL 4198 and BIOL 4398 will count toward graduation.

Department: Biology

3 Credit Hours

6 Total Contact Hours

0 Lab Hours

0 Lecture Hours

6 Other Hours

Classification Restrictions:

Restricted to class of SR

BIOL 4395. Topics in Biology.

Topics in Biology (3-0) Advanced study of contemporary research topics in molecular, cellular, organismic, environmental, or evolutionary biology. Topics vary according to instructor. May be repeated once for credit. Prerequisite: Department approval.

Department: Biology

3 Credit Hours

3 Total Contact Hours

0 Lab Hours

3 Lecture Hours

0 Other Hours

BIOL 4398. Special Problems.

Special Problems (0-0-6) Laboratory research conducted by advanced students. No more than 6 hours of BIOL 4198 and BIOL 4398 may be counted toward graduation. Course fee required.

Department: Biology

3 Credit Hours

6 Total Contact Hours

0 Lab Hours

0 Lecture Hours

6 Other Hours

BIOL 4428. Environment Stressor in Ecosyst.

Environmental Stressors in Ecosystems (3-3) Study of the effects of biotic and abiotic stressors on plants and animals in terrestrial and aquatic environments, and practice of laboratory techniques used to measure such stressors. Field trips required. Prerequisites: CHEM 1306-1106, and BIOL 3316-3117. One semester of organic chemistry is recommended.

Department: Biology

4 Credit Hours

6 Total Contact Hours

3 Lab Hours

3 Lecture Hours

0 Other Hours

Classification Restrictions:

Restricted to class of SR

Prerequisite(s): (CHEM 1106 w/D or better AND CHEM 1306 w/D or better) AND (BIOL 3117 w/C or better AND BIOL 3316 w/D or better)

BIOL 4466. Ecosystem Ecology.

Concepts, methods, and technologies used in ecosystem ecology. Prerequisites: BIOL 3416 AND (BIOL 3316 and BIOL 3117 with a grade of C or better. Strongly recommended:(STAT 2480 OR BIOL 3360) AND (BIOL 3417 OR BIOL 3326). Restricted to class of Senior.

Department: Biology

4 Credit Hours

6 Total Contact Hours

3 Lab Hours

3 Lecture Hours

0 Other Hours

Classification Restrictions:

Restricted to class of SR

Prerequisite(s): (BIOL 3117 w/C or better AND BIOL 3316 w/C or better)