

Degree Type – Bachelor of Science (BS)**Degree Title – Biology****Focus: Biology with Minor**

The Department of Biology is committed to excellence in instruction, scholarly accomplishment, research, professional service and student success. The Department provides a broad-based undergraduate education in Biology so as to give students the opportunity to pursue a career best-suited to their interests and abilities. Graduates are prepared to enter the workforce or continue their education in graduate or professional school. The Department provides rigorous pre-professional preparation for students seeking careers in biological sciences and health professions.

STUDENT LEARNING OUTCOMES:

- 1. Role of the Cell:** The Biology graduate knows the role of the cell in life and living systems, and understands the interrelationships among subcellular structures that contribute to its functioning as a unit.
- 2. Role of Genetics:** The Biology graduate understands the role of genetics in inheritance and can explain how environmental conditions influence natural selection processes and contribute to adaptation.
- 3. Diversity of Life:** The Biology graduate is aware of the diversity of life and interrelationships between an organism and its environment.
- 4. Structure and Function:** The biology graduate understands how the organization of a specific structure within an organism is related to a specific function, understands interrelationships among organs and organ systems within an organism, and how interaction between structure and function contribute to the survival of the organism.
- 5. Scientific Method:** The biology graduate understands the Scientific Method, is able to analyze and interpret data, and communicate research findings in both oral and written form.

A – GENERAL EDUCATION CORE – 42 HOURS

Students must fulfill the General Education Core requirements. The courses listed below satisfy both degree requirements and General Education Core requirements.

Required**Mathematics – 3 hours**

Choose one:

MATH 1342 Elementary Statistical Methods (or MATH 1387 Honors)

MATH 1343 Introduction to Biostatistics (or MATH 1388 Honors)

Life and Physical Science – 6 hours

CHEM 1311 General Chemistry I

CHEM 1312 General Chemistry II

Integrative and Experiential Learning – 2 hours

CHEM 1111 General Chemistry I Lab

CHEM 1112 General Chemistry II Lab

B – MAJOR REQUIREMENTS – 44 HOURS (36 advanced)**1 – Biology Foundation – 23 hours (15 advanced)**

BIOL 1406 General Biology I (or BIOL 1487 Honors)

BIOL 1407 General Biology II (or BIOL 1488 Honors)

BIOL 3301 Biological Evolution

BIOL 3409 Ecology

BIOL 3413 Genetics

BIOL 4400 Biological Communication (Capstone)

2 – Advanced Biology Electives – 21 hours (9 advanced minimum)

Students must take at least one course from each group representing one of three organizational levels of Biology. Group criteria do not need to be met with advanced hours.

a – Cellular/Molecular

Choose at least one:

BIOL 3401 General Microbiology
BIOL 3403 Medical Microbiology and Immunology
BIOL 3405 Histology
BIOL 3406 Developmental Mechanisms
BIOL 3412 Cell Biology
BIOL 3415 Molecular Biology
BIOL 4313 Endocrinology
BIOL 4330 Molecular Evolution
BIOL 4408 Plant Pathology
BIOL 4413 General Virology
BIOL 4417 Bacterial Genetics
BIOL 4418 Electron Microscopy
BIOL 4421 Biotechnology
BIOL 4428 Medical Genomics
CHEM 3303 Biochemistry

b – Organismal

Choose at least one:

BIOL 2401 Anatomy and Physiology I
BIOL 2402 Anatomy and Physiology II
BIOL 2428 Comparative Vertebrate Anatomy
BIOL 3310 Neurobiology
BIOL 3345 Animal Nutrition
BIOL 3407 Comparative Embryology
BIOL 3408 Plant Morphology
BIOL 3411 Mammalian Physiology
BIOL 3414 Invertebrate Zoology
BIOL 4319 Medical Entomology
BIOL 4362 Neuroscience II: System, Developmental, and Disorders)
BIOL 4402 Marine Zoology
BIOL 4404 Ichthyology
BIOL 4405 Plant Physiology
BIOL 4406 Mycology
BIOL 4407 Animal Parasitology
BIOL 4409 Herpetology
BIOL 4410 Marine Botany
BIOL 4412 Ornithology
BIOL 4414 Plant Taxonomy
BIOL 4415 Entomology
BIOL 4416 Mammalogy
BIOL 4419 Aquatic Entomology
BIOL 4420 Plant Anatomy
BIOL 4422 Neurobiology Methods

c – Ecological/Environmental

Choose at least one:

BIOL 3404 Conservation Biology
BIOL 4316 Environmental Toxicology

BIOL 4317 Disease Epidemiology
BIOL 4318 Ethnobotany
BIOL 4388 Global Change Ecology
BIOL 4403 Introduction to Remote Sensing Technology
BIOL 4411 Ecological Physiology of Animals
BIOL 4424 Microbial Ecology
BIOL 4426 Marine Ecology
BIOL 4427 Marine Animal Field Studies
BIOL 4429 Agroecology
BIOL 4432 Animal Behavior

C – SUPPORT COURSES – 4 HOURS

CHEM 2123 Organic Chemistry I Lab
CHEM 2323 Organic Chemistry I

D – FREE ELECTIVES – 12 HOURS

Advanced hours will vary to meet 42 advanced hour requirement.

E – MINOR – 18 HOURS (6 advanced)**TOTAL CREDIT HOURS FOR GRADUATION – 120 HOURS****TOTAL ADVANCED HOURS – 42 HOURS****ADMISSION, PROGRESSION, AND GRADUATION REQUIREMENTS, if applicable:****Admission requirements**

Admission requirements to this program: BIOL 1406 (or BIOL 1487 Honors), BIOL 1407 (or BIOL 1488 Honors), and CHEM 1311/CHEM 1111 with a 'C' or better grade in all of these courses and Department approval.

Graduation requirements

1. Minimum 44 credit hours in Biology and 2.50 Biology GPA; At least 36 upper division hours in Biology.
2. In addition to the graduation requirements listed in the UTRGV 2015-2017 Undergraduate Catalog, demonstration of proficiency in a language other than English is required at the undergraduate level equivalent to a minimum of six credit hours. Proficiency can be demonstrated by a college credit exam, a placement test approved through the UTRGV Department of Writing and Language Studies, and/or up to six credit hours of college-level language coursework.