

Bachelor of Science in Biology

2014 - 2015 Catalog

The University of Texas-Pan American

This document provides a list of the UTPA courses required for the major and their equivalent UTRGV courses.

A significant number of courses have changed their course prefix, number, and title.

For any additional information, please visit the Academic Advising Center.

UTPA Courses	Course Equivalents at UTRGV
A – GENERAL EDUCATION CORE – 43 HOURS	
Natural Sciences – 8 hours	
CHEM 1301/1101 General Chemistry I and Lab	CHEM 1311/1111 General Chemistry I and Lab
CHEM 1302/1102 General Chemistry II and Lab	CHEM 1312/1112 General Chemistry II and Lab
B – MAJOR REQUIREMENTS – 56 HOURS (28 advanced minimum)	
1 – Biology Core – 36 hours (4 advanced minimum)	
a – Biology Foundation – 16 hours (4 advanced)	
BIOL 1401 General Biology I (or BIOL 1487 Honors)	BIOL 1406 General Biology I (or BIOL 1487 Honors)
BIOL 1402 General Biology II (or BIOL 1487 Honors)	BIOL 1407 General Biology II (or BIOL 1487 Honors)
BIOL 3302 Biological Writing	Recommended alternative: BIOL 4400 Biological Communication (Capstone)*
BIOL 4100 Seminar	<small>*If UTPA BIOL 3302 has been completed without BIOL 4100, complete 1 additional UTRGV elective hr</small>
CHEM 2302/2102 Organic Chemistry I and Lab	CHEM 2323/2123 Organic Chemistry I and Lab
b – Designated Electives – 20 hours	
<i>Choose from the following areas:</i>	
i – Molecular, Cellular, Microbiology, or Biotechnology	
<small>Pre-Dental focus must choose BIOL 3401. Other focuses may choose from:</small>	
BIOL 3401 General Microbiology	BIOL 3401 General Microbiology
BIOL 3403 Medical Microbiology and Immunology	BIOL 3403 Medical Microbiology and Immunology
BIOL 3412 Cell Biology	BIOL 3412 Cell Biology
BIOL 3415 Molecular Biology	BIOL 3415 Molecular Biology
BIOL 4404 General Virology	BIOL 4413 General Virology
BIOL 4418 Electron Microscopy	BIOL 4418 Electron Microscopy
BIOL 4420 Biotechnology	BIOL 4421 Biotechnology
ii – Genetics or Evolution	
<i>Choose from:</i>	
BIOL 3301 Biological Evolution	BIOL 3301 Biological Evolution
BIOL 3413 Genetics	BIOL 3413 Genetics
BIOL 4317 Disease Epidemiology	BIOL 4317 Disease Epidemiology
BIOL 4330 Molecular Evolution	BIOL 4330 Molecular Evolution
BIOL 4417 Bacterial Genetics	BIOL 4417 Bacterial Genetics
iii – Developmental and Morphological Biology	
<i>Choose from:</i>	
BIOL 2401	Select alternative option
BIOL 2402 Comparative Vertebrate Anatomy	BIOL 2428 Comparative Vertebrate Anatomy
BIOL 3405 Histology	BIOL 3405 Histology
BIOL 3406 Developmental Mechanisms	BIOL 3406 Developmental Mechanisms
BIOL 3407 Comparative Embryology	BIOL 3407 Comparative Embryology
BIOL 3408 Plant Morphology	BIOL 3408 Plant Morphology
iv – Organismal or Environmental	
<small>Pre-Optometry focus may <u>not</u> choose BIOL 4412 or BIOL 4414.</small>	
BIOL 2406 Environmental Biology	BIOL 2406 Environmental Biology
BIOL 3404 Conservation Biology	BIOL 3404 Conservation Biology
BIOL 3409 Ecology	BIOL 3409 Ecology

BIOL 3414 Invertebrate Zoology
 BIOL 4303 Mammalogy
 BIOL 4304 Ichthyology
 BIOL 4316 Environmental Toxicology
 BIOL 4318 Ethnobotany
 BIOL 4319 Medical Entomology
 BIOL 4402 Marine Zoology
 BIOL 4403 Introduction to Remote Sensing Technology
 BIOL 4406 Mycology
 BIOL 4407 Animal Parasitology
 BIOL 4408 Plant Pathology
 BIOL 4409 Herpetology
 BIOL 4410 Marine Botany
 BIOL 4412 Ornithology
 BIOL 4414 Plant Taxonomy
 BIOL 4415 Entomology
 BIOL 4419 Aquatic Entomology
 BIOL 4424 Microbial Ecology
 BIOL 4426 Marine Ecology
Additional course options for General Biology focus only:
 BIOL 4316 Environmental Toxicology
 BIOL 4388 Global Change Ecology
 BIOL 4427 Marine Animal Field Studies Physiology
v – Physiology
Pre-Optometry focus must choose BIOL 3411.
 BIOL 2403 Anatomy and Physiology
 BIOL 2404 Anatomy and Physiology
 BIOL 3310 Neurobiology
 BIOL 3411 Mammalian Physiology
 BIOL 4405 Plant Physiology
 BIOL 4411 Ecological Physiology of Animals
 BIOL 4422 Neurobiology Methods
Additional course option for General Biology focus only:
 BIOL 4313 Endocrinology
2 – Concentrations – 20 hours (3 advanced minimum)
Choose one concentration:
a – General Biology – 22 hours (6 advanced minimum)
i – Coursework – 3 hours
 MATH/STAT 2330 Elementary Statistical Methods (or MATH 2387 Honors)
ii – Minor – 18 hours (6 advanced minimum)
b – Pre-Dental – 18 hours
 CHEM 2303/2103 Organic Chemistry II and Lab
 CHEM 3303 Biochemistry
 MATH/STAT 2330 Elementary Statistical Methods (or MATH 2387 Honors)
 PHYS 1401 General Physics I
 PHYS 1402 General Physics II
c – Pre-Medical – 16 hours (3 advanced)
 CHEM 2303/2103 Organic Chemistry II and Lab
 CHEM 3303 Biochemistry
 PHYS 1401 General Physics I
 PHYS 1402 General Physics II
Choose one:

BIOL 3414 Invertebrate Zoology
 BIOL 4416 Mammalogy
 BIOL 4404 Ichthyology
 BIOL 4316 Environmental Toxicology
 BIOL 4318 Ethnobotany
 BIOL 4319 Medical Entomology
 BIOL 4402 Marine Zoology
 BIOL 4403 Introduction to Remote Sensing Technology
 BIOL 4406 Mycology
 BIOL 4407 Animal Parasitology
 BIOL 4408 Plant Pathology
 BIOL 4409 Herpetology
 BIOL 4410 Marine Botany
 BIOL 4412 Ornithology
 BIOL 4414 Plant Taxonomy
 BIOL 4415 Entomology
 BIOL 4319 Medical Entomology
 BIOL 4424 Microbial Ecology
 BIOL 4426 Marine Ecology

 BIOL 4316 Environmental Toxicology
 BIOL 4388 Global Change Ecology
 BIOL 4427 Marine Animal Field Studies

 BIOL 2401 Anatomy and Physiology I
 BIOL 2402 Anatomy and Physiology II
 BIOL 3310 Neurobiology
 BIOL 3411 Mammalian Physiology
 BIOL 4405 Plant Physiology
 BIOL 4411 Ecological Physiology of Animals
 BIOL 4422 Neurobiology Methods

 BIOL 4313 Endocrinology

 MATH 1342 Elementary Statistical Methods (or MATH 2387 Honors)

 CHEM 2325/2125 Organic Chemistry II and Lab
 CHEM 3303 Biochemistry I
 MATH 1342 Elementary Statistical Methods (or MATH 2387 Honors)
 PHYS 1401 General Physics I
 PHYS 1402 General Physics II

 CHEM 2325/2125 Organic Chemistry II and Lab
 CHEM 3303 Biochemistry I
 PHYS 1401 General Physics I
 PHYS 1402 General Physics II

MATH 1460 Calculus I (or MATH 1487 Honors) one-hour lecture
MATH/STAT 2330 Elementary Statistical Methods (or MATH 2387 Honors)

d – Pre-Optometry – 22 hours (6 advanced)

CHEM 2303/2103 Organic Chemistry II and Lab

CHEM 3303 Biochemistry

MATH 1460 Calculus I (or MATH 1487 Honors) one-hour lecture

MATH/STAT 2330 Elementary Statistical Methods (or MATH 2387 Honors)

PHYS 1401 General Physics I

PHYS 1402 General Physics II

Choose 3 hours of advanced Chemistry.

C – FREE ELECTIVES – 19 HOURS (11 advanced minimum)

MATH 2413 Calculus I (or MATH 2487 Honors) one-hour lecture

MATH 1342 Elementary Statistical Methods (or MATH 2387 Honors)

CHEM 2325/2125 Organic Chemistry II and Lab

CHEM 3303 Biochemistry I

MATH 2413 Calculus I (or MATH 2487 Honors) one-hour lecture

MATH 1342 Elementary Statistical Methods (or MATH 2387 Honors)

PHYS 1401 General Physics I

PHYS 1402 General Physics II

TOTAL CREDIT HOURS FOR GRADUATION – 120 HOURS

TOTAL ADVANCED HOURS – 51 HOURS