
The multidisciplinary Bachelor of Science degree in Environmental Science prepares graduates for careers at local, state and federal government agencies, non-profit organizations, and environmental consulting firms. Additionally, graduates of this program are prepared to continue on to graduate studies in order to pursue research and scholarship opportunities. The program core focuses on key environmental issues while the restricted electives allow the students to choose to focus on areas of interest to the individual student.

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

020 - Mathematics – 3 hours

Choose one:

MATH 1314 College Algebra

MATH 2412 Pre-Calculus

030 - Life and Physical Sciences – 6 hours

ENVR 1401 Introduction to Environmental Science I three-hour lecture

ENVR 1402 Introduction to Environmental Science II three-hour lecture

090 - Integrative and Experiential Learning – 3 hours

Students should select the laboratories corresponding to the Life and Physical Science courses taken.

BIOL 1406 General Biology I (or BIOL 1487) one-hour lab

ENVR 1401 Introduction to Environmental Science I one-hour lab

ENVR 1402 Introduction to Environmental Science II one-hour lab

B – MAJOR REQUIREMENTS – 68 HOURS (42 advanced)

Students should carefully plan prerequisites and proper course sequence by meeting with an advisor from the program when selecting this major.

1 – Environmental Science Core – 13 hours (7 advanced)

ENVR 2301 Earth System Science

ENVR 2302 Environment and Society

ENVR 3303 Research Methodology and Data Analysis in Environmental Sciences

GEOL 4411 Introduction to Geographic Information Systems

2 – Supporting Sciences – 30 hours

a. Science Foundation – 22 hours

MATH 1342 Elementary Statistical Methods (or MATH 1387 Honors)

BIOL 1406 General Biology I (or BIOL 1487) three-hour lecture

CHEM 1311 General Chemistry I

CHEM 1111 General Chemistry I Lab

GEOL 1403 Physical Geology

Choose one:

PHYS 1401 General Physics I

PHYS 2425 Physics for Scientists and Engineers I

MATH 2413 Calculus I (or MATH 2487)

b. Science Restricted Electives – 8 hours

Choose at least two by faculty advisement

CHEM 1312/1112 General Chemistry II/Lab

CHEM 2323/2123 Organic Chemistry I/Lab

Choose one:

PHYS 1402 General Physics II†

PHYS 2426 Physics for Scientist and Engineers II

GEOL 1404 Historical Geology

BIOL 1407 General Biology II (or BIOL 1488)

MATH 2414 Calculus II (or MATH 2488 Honors)†

†students considering graduate school or a career in the sciences should choose this option.

3 – Concentrations – 25 hours (25 advanced)

Students may choose a concentration in Environmental Biology, Environmental Chemistry, Earth and Ocean Sciences, or Environment and Society. Students who do not desire a specific concentration may pursue the Interdisciplinary Environmental Science option. Concentrations include at least 18 hours within a given concentration plus up to 7 elective hours from the Environmental Science Elective Course block. Course substitutions are allowed with the approval of a faculty advisor and program director.

‡ Denotes elective courses with additional prerequisites.

1. Environmental Biology Concentration – 25 hours (25 advanced)

Recommended course from Section B.2b: BIOL 1407 (or BIOL 1488) and CHEM 1312/1112

BIOL 3409 Ecology

BIOL 3420 Environmental Biology

Choose 17 hours from:

BIOL 3401 General Microbiology

BIOL 3404 Conservation Biology

BIOL 3414 Invertebrate Zoology

BIOL 4411 Ecological Physiology of Animals

BIOL 4388 Global Change Ecology

BIOL 4402 Marine Zoology

BIOL 4404 Ichthyology

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 4423 Wildlife Ecology and Management

BIOL 4424 Microbial Ecology‡

BIOL 4426 Marine Ecology

BIOL 4430 Coastal Ecology

Any other advanced BIOL course with the approval of faculty mentor.

2. Environmental Chemistry Concentration – 25 hours (25 advanced)

Recommended course from Section B.2b: CHEM 1312/1112 and CHEM 2323/2123

CHEM 3401 Environmental Chemistry

Choose 21 hours from:

CHEM 3301/3101 Inorganic Chemistry/Lab

CHEM 3303/3103 Biochemistry/Lab

GEOL 3411 Mineralogy

CHEM 4201 Chemistry Problems I

CHEM 4278 Special Topics in Chemistry

CHEM 4304/4104 Instrumental Analysis/Lab‡

EEMS 3360 Soil Science and Conservation

EEMS 4366 Nanotechnologies in Food and Agriculture

3. Earth and Ocean Sciences Concentration – 25 hours (25 advanced)

Recommended course from Section B.2b: GEOL 1404

GEOL 3402 Hydrologic Systems

GEOL 3405 Oceanography

Choose 17 hours from:

EEMS 3360 Soil Science and Conservation

GEOL 3401 Geomorphology

GEOL 3411 Mineralogy

GEOL 3412 Petrology‡

GEOL 3421 Structural Geology

GEOL 4170 Topics in Geology Lab

GEOL 4302 Environmental Geology

GEOL 4309 Undergraduate Research Geosciences
GEOL 4385 Special Topics in Geology
GEOL 4412 Advanced Geographic Information Systems
GEOL 4403 Sedimentology and Stratigraphy
GEOL 4404 Coastal Geology‡
GEOL 4408 Applications of Geographic Information Systems
GEOL 4471 Field Geology

4. Environment and Society Concentration – 25 hours (25 advanced)

Recommended course from Section B.2b: BIOL 1407 (or BIOL 1488)

Choose one:

ENVR 4301 Environmental Regulations
POLS 4356 US Environmental Policy

Choose 22 hours from (at least 12 must be from College of Liberal Arts):

ANTH 4314 Environmental Anthropology
CRIJ 4316 Environmental Crime and Justice
ENVR 3302 Environmental Ethics
ENVR 3301 Natural Resources Conservation
ENVR 3304 Sustainable Development
ENVR 4302 Environmental Impact Analysis
GEOL 4302 Environmental Geology
GEOL 4412 Advanced Geographic Information Systems
GEOL 4408 Applications of Geographic Information Systems
HIST 3302 Geography and Environment in History‡
HIST 3335 American Environmental History‡
MGMT 4362 Business and Sustainability
PHIL 3352 Religion and the Environment
POLS 4344 Green Political Theory
POLS 4357 Urban Sustainability
SOC1 3312 Environmental Sociology‡

5. Interdisciplinary Environmental Science Concentration – 25 hours (25 advanced)

Recommended course from Section B.2b: BIOL 1407 (or BIOL 1488)

ENVR 3301 Natural Resources Conservation
ENVR 3302 Environmental Ethics

Choose any 19 advanced hours from the above concentrations (at least 12 must be from College of Science)

6. Additional Environmental Science Elective Courses (suitable for any concentration)

BIOL 3409 Ecology
BIOL 4403 Introduction to Remote Sensing Technology
ENVR 3301 Natural Resources Conservation
ENVR 4301 Environmental Regulations
ENVR 4302 Environmental Impact Analysis
ENVR 4304 Environmental Sciences Internship
ENVR 4305 Environmental Science Practicum
ENVR 4170 Topics in Environmental Sciences Lab
ENVR 4370 Topics in Environmental Sciences
ENVR 4303 Environmental Sciences Research Project
GEOL 3402 Hydrologic Systems
GEOL 3405 Oceanography
GEOL 4408 Applications of Geographic Information Systems
GEOL 4412 Advanced Geographic Information Systems
POLS 4356 US Environmental Policy‡

4 - Electives - 10 hours (10 advanced)

TOTAL CREDIT HOURS FOR GRADUATION – 120 HOURS
TOTAL ADVANCED HOURS – 42 HOURS

ADMISSION, PROGRESSION, AND GRADUATION REQUIREMENTS, if applicable:

Graduation requirements

1. In addition to the graduation requirements listed in the UTRGV 2018-2019 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.