BIOLOGY (B.S.) ENVIRONMENTAL SCIENCE TRACK

Major Requirements

Code	Title	Hours
BIO 111 & BIOL 111	GENERAL BIOLOGY and GENERAL BIOLOGY LAB	4
BIO 112 & BIOL 112	GENERAL BIOLOGY and GENERAL BIOLOGY LAB	4
BIO 200 & BIOL 200	Introduction to Cell Biology and INTRO TO CELL BIOLOGY LAB	4
BIO 209 & BIOL 209	Principles of Genetics and Principles of Genetics Lab	4
BIO 313 & BIOL 313	INTRODUCTION TO MICROBIOLOGY and INTRODUCTION TO MICROBIOLOGY L	4
BIO 390	SEMINAR IN BIOLOGY (w)	1
CHEM 141 & CHML 141	GENERAL CHEMISTRY I and GENERAL CHEMISTRY LAB	4
CHEM 142 & CHML 142	GENERAL CHEMISTRY II and GENERAL CHEMISTRY II LAB	4
CHEM 241 & CHML 241	ORGANIC CHEMISTRY I and ORGANIC CHEMISTRY I LAB	4
CHEM 242 & CHML 242	ORGANIC CHEMISTRY II and ORGANIC CHEMISTRY II LAB	4
MATH 111	COLLEGE ALGEBRA	3
MATH 112	PLANE TRIGONOMETRY	3
MATH 241	CALCULUS I WITH LABORATORY	3
PHY 201 & PHYL 201	BASIC PHYSICS I and BASIC PHYSICS LAB I	4
PHY 202 & PHYL 202	BASIC PHYSICS II and BASIC PHYSICS LAB II	4
STATISTICS ELECTIVE		3
Total Hours		**57**

Concentration

Code	Title	Hours
BIO 201	INTRO TO ENVIRONMENTAL SCIENCE	3
BIO 404	ENVIRONMENTAL SCIENCE	3
BIOL 404	ENVIRONMENTAL SCIENCE LAB	1
BIO 423 & BIOL 423	ECOLOGY and ECOLOGY LABORATORY	4
BIO 395	Principles of Biochemistry	3
or CHEM 431	BIOCHEMISTRY I	
ENVIRONMENTAL SCIENCE ELECTIVES		12
ENVIRONMENTAL SCIENCE ELECTIVES (300-400 LEVEL)		8
Total Hours		**34**

The following may be taken as Biology electives:

Code	Title	Hours
BIO 115 & BIOL 115	GENERAL ZOOLOGY and GENERAL ZOOLOGY LAB	4
BIO 119 & BIOL 119	GENERAL BOTANY and GENERAL BOTANY LAB	4
BIO 234 & BIOL 234	HUMAN ANATOMY & PHYSIOLOGY I and HUMAN ANATOMY & PHYSIOLOGY LAB	4
BIO 235 & BIOL 235	HUMAN ANATOMY & PHYSIOLOGY II and HUMAN ANATOMY & PHYSIOLOGY LAB	4
BIO 236	CONCPTS OF PUBLIC HEALTH	3
BIO 302	BIOINFORMATICS AND COMPUTATIONAL BIOLOGY	3
BIO 332	PARASITOLOGY	3
BIO 335	INTRODUCTION TO ANIMAL SCIENCE	3
BIO 391	INTRODUCTION TO RESEARCH	2
BIOL 395	Principles of Biochemistry Lab	1
BIO 406 & BIOL 406	HUMAN ENVIRONMENT & NATURL SYS and HUMAN ENVIRNMNT & NAT SYSM LAB	4
BIO 412	NATURAL RES & CONS	3
BIO 425	INTRODUCTION TO MARINE BIOLOGY	3
BIO 431	INVERTEBRATE ZOOLOGY	3
BIO 433	BIOLOGY OF WATER POLUTION	3
BIO 435	ANIMAL NUTRITION	3
BIO 440 & BIOL 440	CELL BIOLOGY and CELL BIOLOGY LAB	4
BIO 450	MARINE INVERTEBRATE ZOOLOGY	3
BIO 451	INTRODUCTION TO IMMUNOLOGY	3
BIO 461	INTRODUCTION TO VIROLOGY	3
BIO 447 & BIOL 447	Introduction to Oceanography and Introduction to Oceanography Lab	4
SCI 201 & SCIL 201	PHYSICAL SCIENCE and PHYSICAL SCIENCE LAB	3
SCI 205	EARTH & SPACE SCIENCE	3
SCI 215	GLOBAL CHANGE	3
SCI 310 & SCIL 310	EARTH HISTORY and EARTH HISTORY LAB	4
SCI 320	SEDIMENTARY ENVIRONMENTS	3
SCI 410	MET&CUR MAT FOR SCIENCE CR	3
SCI 425	ENVIRONMENTAL GEOLOGY	2
SCI 331	INTRO TO GIS & REMOTE SENSING	3
ITEM 402	BASIC GEOG INFO SYS REMOTE SEN	3

Note: Laboratory courses must be taken during the same semester as lecture for biology, chemistry and physics courses unless approved by the department chair.

Other Requirements/Offerings

Earning at least a "C" or better in all required BIO/BIOL courses

Curriculum Map

Course	Title	Hours
Freshman		
Fall		
BIO 111 & BIOL 111	GENERAL BIOLOGY and GENERAL BIOLOGY LAB	4

CHEM 141 & CHML 141	GENERAL CHEMISTRY I and GENERAL CHEMISTRY LAB	4
MATH 111 or MATH 103	COLLEGE ALGEBRA or College Algebra with Corequisite Support	3
ENG 104 or ENG 103 or ENG 111	COMPOSITION I or English Composition I with Co-requisite Support or COMPOSITION & LITERATURE FOR L	3
UNIV 100	UNIVERSITY SUCCESS (A)	2
	Hours	**16**
Spring		
BIO 112 & BIOL 112	GENERAL BIOLOGY and GENERAL BIOLOGY LAB	4
CHEM 142 & CHML 142	GENERAL CHEMISTRY II and GENERAL CHEMISTRY II LAB	4
MATH 112	PLANE TRIGONOMETRY	3
ENG 105 or ENG 112	COMPOSITION II or COMPOSITION	3
Pathway Option		3
	Hours	**17**
Sophomore		
Fall		
BIO 200 & BIOL 200	Introduction to Cell Biology and INTRO TO CELL BIOLOGY LAB	4
CHEM 241 & CHML 241	ORGANIC CHEMISTRY I and ORGANIC CHEMISTRY I LAB	4
MATH 241	CALCULUS I WITH LABORATORY	3
Social & Behavioral Science Option		3
Pathway Option		3
	Hours	**17**
Spring		
BIO 201	INTRO TO ENVIRONMENTAL SCIENCE	3
BIO 209 & BIOL 209	Principles of Genetics and Principles of Genetics Lab	4
CHEM 242 & CHML 242	ORGANIC CHEMISTRY II and ORGANIC CHEMISTRY II LAB	4
UNIV 200	CIVIC ENGAGEMENT	1
Pathway Option		3
	Hours	**15**
Junior		
Fall		
BIO 313 & BIOL 313	INTRODUCTION TO MICROBIOLOGY and INTRODUCTION TO MICROBIOLOGY L	4
BIO 390	SEMINAR IN BIOLOGY	1
BIO 395 or CHEM 431	Principles of Biochemistry or BIOCHEMISTRY I	3
PHY 201 & PHYL 201	BASIC PHYSICS I and BASIC PHYSICS LAB I	4
Humanities & Fine Arts Option		3
	Hours	**15**
Spring		
BIO 404	ENVIRONMENTAL SCIENCE	3
& BIOL 404 ENVIRONMENTAL SCIENCE LAB		1
BIO 423 & BIOL 423	ECOLOGY and ECOLOGY LABORATORY	4
PHY 202 & PHYL 202	BASIC PHYSICS II and BASIC PHYSICS LAB II	4
Humanities & Fine Arts Option		3
	Hours	**15**
Senior		
Fall		
Environmental Science Elective		12
Statistics Elective		3
	Hours	**15**
Spring		
Social & Behavioral Science Option		3
Humanities & Fine Arts Option		3
Environmental Science Elective (300-400 Level)		8
	Hours	**14**
	Total Hours	**124**

Notes:

- Candidates that transfer 12 or more hours of college credit are exempt from UNIV 100 UNIVERSITY SUCCESS; however, the student must take 2 hours of general electives to replace the UNIV course.
- Online Graduation Clearance (**to be completed during the graduating semester only**).

Student Learning Outcomes

- Students will demonstrate the ability to analyze primary scientific literature, interpret results (including graphs, tables, and charts), evaluate, and summarize findings, and present their analysis in written or oral form.
- Students will be able to compare the biotic and abiotic factors that shape major ecosystems and assess how changes in these factors would alter the boundaries between these habitats.
- Students will be able to explain the biochemical processes that carry out transfer of biological information from DNA and how these processes are regulated and illustrate the principles of genetics and epigenetics to explain heritable traits in a variety of organisms.
- Students will be able to apply understanding of principles of how molecular and cell assemblies, organs, and organisms develop structure and carry out functions.
- Students will demonstrate the ability to inventory and differentiate the major systems of the human body and describe their function.