

BIOLOGY MAJOR WITH BIOTECHNOLOGY OPTION, BACHELOR OF SCIENCE (BS)

PHYS 163	INSTRUMENTATION LAB I	1
Total Credits		124

For information on General Education, see Undergraduate Degree (<http://catalog.ewu.edu/archives/2015-2016/undergraduate-degree>).

Student Learning Outcomes—students will

demonstrate knowledge of evolution, diversity of life, and form and function of living organisms;

- interpret observations through the creation, testing, analysis of hypotheses;
- design laboratory or field experiments;
- inspect data and apply basic statistics to their analysis and communication.
- Write reports and prepare and deliver oral reports that:
- demonstrate ability to use scientific journals, periodicals, and electronic media to access current biological information;
- demonstrate ability to evaluate journal articles from the primary literature.

Required Biology Courses

BIOL 171	BIOLOGY I	5
BIOL 172	BIOLOGY II	5
BIOL 173	BIOLOGY III	5
BIOL 270	BIOLOGICAL INVESTIGATION	3
BIOL 301	MICROBIOLOGY	5
BIOL 310	FUNDAMENTALS OF GENETICS	5
BIOL 436	CELL BIOLOGY	5
BIOL 438	MOLECULAR BIOLOGY	5
BIOL 485	MOLECULAR BIOTECHNOLOGY	5
BIOL 488	MOLECULAR BIOTECHNOLOGY LABORATORY	2
BIOL 489	TOPICS IN MOLECULAR BIOTECHNOLOGY	2
BIOL 490A	BIOTECHNOLOGY CAPSTONE	5

Choose from the following 10

BIOL 302	BOTANY	
BIOL 304	VERTEBRATE ZOOLOGY	
BIOL 420	EPIDEMIOLOGY	
BIOL 421	MEDICAL BACTERIOLOGY	
BIOL 430	IMMUNOLOGY	
BIOL 432	VIROLOGY	
BIOL 460	HEMATOLOGY	
BIOL 477	EMBRYOLOGY	
CHEM 481	INTERMEDIARY METABOLISM	
CSCD 409	SCIENTIFIC PROGRAMMING	
MATH 162	CALCULUS II	

Required Supporting Courses

CHEM 151	GENERAL CHEMISTRY	5
CHEM 152	GENERAL CHEMISTRY	5
CHEM 153	GENERAL CHEMISTRY	5
CHEM 304	QUANTITATIVE ANALYSIS	6
CHEM 351	ORGANIC CHEMISTRY	4
CHEM 352	ORGANIC CHEMISTRY	4
CHEM 372	ORGANIC CHEM LABORATORY I	3
CHEM 480	BIOCHEMISTRY	5
MATH 161	CALCULUS I	5
MATH 380	ELEMENTARY PROBABILITY AND STATISTICS	5
or BIOL 380	DATA ANALYSIS FOR BIOLOGISTS	
PHYS 131	INTRODUCTORY PHYSICS I	4
or PHYS 151	GENERAL PHYSICS I	
PHYS 132	INTRODUCTORY PHYSICS II	4
or PHYS 152	GENERAL PHYSICS II	
PHYS 133	INTRODUCTORY PHYSICS III	4
or PHYS 153	GENERAL PHYSICS III	
PHYS 161	MECHANICS LABORATORY	1
PHYS 162	HEAT AND OPTICS LABORATORY	1