

# BIOLOGY MAJOR, BACHELOR OF SCIENCE IN BIOLOGY (BS)

**Graduation Requirements:** complete the Educational Testing Service (ETS) Major Field Test for Biology.

See the Biology Department website (<https://www.ewu.edu/cstem/biology/biology-bs/#guides>) for additional information about advising tracks including Pre-Veterinary medicine, Pre-Pharmacy, and many others.

**Grade Requirements:** a cumulative GPA  $\geq 2.0$  for all courses in student's curriculum in Biology.

## Required Biology Courses

BIOL 171	BIOLOGY I	5
BIOL 172	BIOLOGY II	5
BIOL 173	BIOLOGY III	5
BIOL 270	BIOLOGICAL INVESTIGATION	3
BIOL 310	FUNDAMENTALS OF GENETICS	5
Choose one of the following		
BIOL 301	MICROBIOLOGY	5
or BIOL 302	BOTANY	
or BIOL 303	INVERTEBRATE ZOOLOGY	
or BIOL 304	VERTEBRATE ZOOLOGY	
Choose one of the following		
BIOL 423	EVOLUTION	4-5
or BIOL 440	ECOLOGY	
Choose one of the following		
BIOL 436	CELL BIOLOGY	5
or BIOL 438	MOLECULAR BIOLOGY	
Choose one of the following		
BIOL 334	HUMAN ANATOMY AND PHYSIOLOGY III	4-5
or BIOL 351	PRINCIPLES OF ANIMAL PHYSIOLOGY	
or BIOL 352	PRINCIPLES OF PLANT PHYSIOLOGY	
or BIOL 353	PRINCIPLES OF MICROBIAL PHYSIOLOGY	

## Required Supporting Courses

BIOL 380	DATA ANALYSIS FOR BIOLOGISTS	5
or MATH 161	CALCULUS I	
or MATH 380	ELEMENTARY PROBABILITY AND STATISTICS	
CHEM 171 & 171L & CHEM 172 & CHEM 172L & CHEM 173 & CHEM 173L	GENERAL CHEMISTRY I and GENERAL CHEMISTRY LABORATORY I and GENERAL CHEMISTRY II and GENERAL CHEMISTRY LABORATORY II and GENERAL CHEMISTRY III and GENERAL CHEMISTRY LABORATORY III	15

**Electives—21 of 36 credits must be in Biology, non-Biology electives must be approved by faculty advisor.** 36

## Required Senior Capstone

BIOL 490	SENIOR CAPSTONE	5
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**Total Credits**

**102-104**

## Plan of Study

**The following plan of study is for a student with zero credits.** Individual students may have different factors such as: credit through transfer work, Advanced Placement, Running Start, or any other type of college-level coursework that requires an individual plan.

Courses may be offered in different terms and not all courses are offered every term, checking the academic schedule is paramount in keeping an individual plan current. There may be some courses that have required prerequisites not listed in the plan, review the course descriptions for information. **Students should connect with an advisor to ensure they are on track to graduate.**

All Undergraduate students are required to meet the Undergraduate Degree Requirements (<http://catalog.ewu.edu/undergraduate-degree/>).

## 2 Biology Major, Bachelor of Science in Biology (BS)

First Year			
Fall Quarter	Credits Winter Quarter	Credits Spring Quarter	Credits
BIOL 171	5 BIOL 172	5 BIOL 173	5
CHEM 171 & 171L (Natural Science BACR 1)	5 CHEM 172 & 172L (Natural Science BACR 2)	5 BIOL 270	3
ENGL 101	5 ENGL 201	5 CHEM 173 & 173L	5
		Elective - certificate, minor, or general elective	2
	15	15	15
Second Year			
Fall Quarter	Credits Winter Quarter	Credits Spring Quarter	Credits
BIOL 301, 302, 303, or 304	5 BIOL 310	5 BIOL 436 or 438	5
BIOL 380, MATH 161, or MATH 380	5 BIOL 423 or 440	4-5 Biology Elective <sup>2</sup>	4
Diversity - graduation requirement <sup>1</sup>	5 Global Studies - graduation requirement <sup>1</sup>	5 Humanities & Arts BACR 1 <sup>1</sup>	5
		Elective - certificate, minor, or general elective	2
	15	15-16	16
Third Year			
Fall Quarter	Credits Winter Quarter	Credits Spring Quarter	Credits
BIOL 334, 351, 352, or 353	4-5 Biology Elective <sup>2</sup>	4 Biology Elective <sup>2</sup>	4
Biology Elective <sup>2</sup>	4 Biology Elective <sup>2</sup>	4 Social Science BACR 2 <sup>1</sup>	5
Humanities & Arts BACR 2 <sup>1</sup>	5 Social Science BACR 1 <sup>1</sup>	5 Elective - certificate, minor, or general elective	5
Elective - certificate, minor, or general elective	1 Elective - certificate, minor, or general elective	2 Elective - certificate, minor, or general elective	1
	14-15	15	15
Fourth Year			
Fall Quarter	Credits Winter Quarter	Credits Spring Quarter	Credits
Biology Elective <sup>2</sup>	4 Biology Elective <sup>2</sup>	4 BIOL 490 (Senior Capstone - graduation requirement)	5
Biology Elective <sup>2</sup>	4 Elective - certificate, minor, or general elective	5 Elective - certificate, minor, or general elective	5
Biology Elective <sup>2</sup>	4 Elective - certificate, minor, or general elective	5 Elective - certificate, minor, or general elective	5
Elective - certificate, minor, or general elective	3 Elective - certificate, minor, or general elective	1	1
	15	15	15

Total Credits 180-182

<sup>1</sup> University Graduation Requirements (UGR) and Breadth Area Course Requirements (BACR) courses may be less than 5 credits and additional credits may be required to reach the required 180 total credits needed to graduate. Students should connect with an advisor to ensure they are on track to graduate.

<sup>2</sup> Electives – 21 of 36 credits must be in Biology, non-Biology electives must be approved by faculty advisor.

### University Competencies and Proficiencies

English (<http://catalog.ewu.edu/undergraduate-degree/#newitemtext>)

Quantitative and Symbolic Reasoning (<http://catalog.ewu.edu/undergraduate-degree/#mathcompproficienciestext>)

Placement and Clearance (<http://catalog.ewu.edu/placement/>)

Prior Learning/Sources of Credit AP, CLEP, IB (<http://catalog.ewu.edu/prior-learning/>)

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### General Education Requirements (<http://catalog.ewu.edu/undergraduate-degree/#generaleducationrequirementstext>) (GER)

- Minimum Credits—180 cumulative credit hours
  - 60 upper-division credits (300 level or above)
  - 45 credits in residence (attendance) at Eastern, with at least 15 upper-division credits in major in residence at Eastern
- Minimum Cumulative GPA  $\geq 2.0$

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### Breadth Area Core Requirements (BACR)

Humanities and Arts (<http://catalog.ewu.edu/undergraduate-degree/#humanitiesandfineartsgecrtext>)

Natural Sciences (<http://catalog.ewu.edu/undergraduate-degree/#naturalsciencesgecrtext>)

Social Sciences (<http://catalog.ewu.edu/undergraduate-degree/#socialsciencesgecrtext>)

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### University Graduation Requirements (<http://catalog.ewu.edu/undergraduate-degree/#universitygraduationrequirementstext>) (UGR)

Diversity Course List (<http://catalog.ewu.edu/undergraduate-degree/#cultureandgenderdiversityintheuslisttext>)

World Language (<http://catalog.ewu.edu/undergraduate-degree/#worldlanguagetext>) (for Bachelor of Arts)  
Global Studies Course List (<http://catalog.ewu.edu/undergraduate-degree/#internationalstudiesrequirementtext>)  
Minor or Certificate (<http://catalog.ewu.edu/undergraduate-degree/#majorminororcertificateugrtext>)  
Senior Capstone Course List (<http://catalog.ewu.edu/undergraduate-degree/#capstonecourselisttext>)

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Application for Graduation (use EagleNET (<https://inside.ewu.edu/eaglenet/>)) must be made at least two terms in advance of the term you expect to graduate (undergraduate and post-baccalaureate).

Use the Catalog Archives (<http://catalog.ewu.edu/archives/>) to determine *two important catalog years*.

Requirements in Degree Works (<https://inside.ewu.edu/records-and-registration/degree-works/>) are based on these two catalog years:

- a. The catalog *in effect at the student's first term* of current matriculation is used to determine **BACR** (Breadth Area Credit Requirements) **and UGR** (Undergraduate Graduation Requirements).
- b. The catalog *in effect at the time the student declares a major or minor* is used to determine the program requirements.

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**Students who earn a BS in Biology from EWU should be able to:**

- apply basic concepts of cell biology, including understanding key terms;
- apply basic concepts of ecology and evolution, including understanding key terms;
- apply basic concepts of molecular biology and genetics, including understanding key terms;
- apply basic concepts of organismal biology, including understanding key terms;
- apply basic statistics to analyze and interpret quantitative data;
- compose written documents that communicate information in a manner consistent with scientific norms;
- deliver presentations that communicate information in a manner consistent with scientific norms;
- use scientific practices to generate evidence to support or refute proposed explanations for natural phenomena.