

Biomedical Science, B.S.

Visit the Biology Department page (<https://www.uvu.edu/college-of-science/biology/>) for more information on the program and access to advising.

Program Description

Biomedical Science aims to use the vast and ever-progressing fields of biology to improve human health and the treatment of disease. It encompasses the general fields of human anatomy, physiology, genetics, cell biology, and molecular biology, as well as more specialized disciplines such as neuroscience, immunology, histology, developmental biology and pathophysiology, among others. A degree in Biomedical Science helps to prepare students for several careers within healthcare, as well as a solid foundation for other post-baccalaureate work. These include preparation for medical school, dental school, and a wide variety of other graduate school options. In addition, students who are not interested in pursuing a graduate degree could work for medical labs, research labs, hospitals, biotech companies, and pharmaceutical companies following graduation with a BS in Biomedical Science.

Matriculation Requirements

BIOL 1610 College Biology I or BIOL 1610H College Biology I with C- or higher and approval of Biology Department advisor.

Program Requirements

Code	Title	Credit Hours
Total Credit Hours		120
General Education Requirements		29 Credits
ENGL 1010 or ENGL 1010H	Introduction to Academic Writing	3
ENGL 2010	Intermediate Academic Writing	3
MATH 1050 or MATH 1055	College Algebra	4
	College Algebra with Preliminaries	
Complete one of the following:		3
HIST 2700 & HIST 2710	US History to 1877 and US History since 1877 (6)	
HIST 1700	American History (3)	
HIST 1740	US Economic History (3)	
POLS 1000	American Heritage (3)	
POLS 1100	American National Government (3)	
Distribution Courses:		
Personal, Professional, and Civic Growth GE class		3
Humanities Distribution		3
Fine Arts Distribution		3
Social/Behavioral Science <small>Recommend PSY 1010</small>		3
CHEM 1210	Principles of Chemistry I	4
Discipline Core Requirements		74 Credits
BIOL 1610 or BIOL 1610H	College Biology I	4
BIOL 1615	College Biology I Laboratory	1
CHEM 1215	Principles of Chemistry I Laboratory	1
CHEM 1220	Principles of Chemistry II	4
CHEM 1225	Principles of Chemistry II Laboratory	1
BIOL 3400	Cell Biology	3
BIOL 3500	Genetics	3
BIOL 3600	Biological Chemistry	3
ZOOL 2320 & ZOOL 2325	Human Anatomy and Human Anatomy Laboratory	4

ZOOL 2420 & ZOOL 2425	Human Physiology and Human Physiology Laboratory	4
BIOL 4940 or BIOL 4260	Student Seminar Ethical Issues in Biology	2
BIOL 4560	Evolutionary Medicine	3
BIOL 4920R	Professional Development	1
CHEM 2310 & CHEM 2315	Organic Chemistry I and Organic Chemistry I Laboratory	5
CHEM 2320 & CHEM 2325	Organic Chemistry II and Organic Chemistry II Laboratory	5
PHYS 2010 & PHYS 2015	College Physics I and College Physics I Lab	5
PHYS 2020 & PHYS 2025	College Physics II and College Physics II Lab	5
PSY 3110 or STAT 2040	Statistics for the Behavioral Sciences Principles of Statistics	4
Choose four from the following	Student must complete at least 4 of the courses listed even if it exceeds the required 12 credit hours	12
BIOL 3300	Developmental Biology (3)	
BIOL 3550	Molecular Biology (3)	
BIOL 4450	Immunology (3)	
MICR 3200	Emerging and Re Emerging Diseases and Zoonoses (3)	
MICR 4500	Virology (3)	
ZOOL 4300	Histology (4)	
ZOOL 4400	Pathophysiology (4)	
ZOOL 4700	Advanced Anatomy (4)	
ZOOL 4750	Human Physiology A Cell Biology Approach (4)	
ZOOL 4780	Neuroscience (4)	
ZOOL 4800	Dissection Techniques (3)	
Choose one from the following	Recommend MICR 3450 & 3455	4
MICR 2060 & MICR 2065	Microbiology for Health Professions and Microbiology for Health Professions Laboratory (4)	
MICR 3450 & MICR 3455	General Microbiology and General Microbiology Laboratory (4)	
Elective Requirements		17
Complete 17 credits from the following: ¹		Credits 17
BIOL 1620 & BIOL 1625	College Biology II and College Biology II Laboratory (4)	
BIOL 3200	Guided Research Experience (1-3)	
BIOL 3405	Cell Biology Laboratory (1)	
BIOL 3515	Advanced Genetics Laboratory (1)	
BIOL/CHEM 3620	Biological Chemistry II (3)	
BIOL 3690R	Introduction to Undergraduate Research (1)	
BIOL 3700	General Ecology (3)	
BIOL 4500 or BIOL 4550	Principles of Evolution (3) Molecular Evolution and Bioinformatics	
BIOL 4890R	Student Research (1-4)	
BIOL 4900R	Special Topics in Biology (1-4)	
BIOL 4910R	Special Topics in Organismal Biology (1-4)	
BIOL 4930R	Biology Journal Club (1)	
BIOL 4970R	Biology Colloquium (0.5-1)	
BIOL 4990R	Senior Thesis (1-2)	
BOT 3800	Ethnobotany (4)	
EXSC 2700G	Foundations of Exercise Science (3)	

EXSC 3500	Kinesiology (3)
EXSC 4050	Obesity Physiology and Physical Activity (3)
MATH 1210	Calculus I (4)
MATH 1220	Calculus II (4)
ZOOL 3100 & ZOOL 3105	Vertebrate Zoology and Vertebrate Zoology Laboratory (4)
ZOOL 3500 & ZOOL 3505	Mammalogy and Mammalogy Laboratory (4)
ZOOL 3600	Forensic Anthropology I (3)
ZOOL/EXSC 3700	Exercise Physiology (3)
ZOOL/MICR 4100	Parasitology (4)
ZOOL 4500	Comparative Vertebrate Zoology (3)
ZOOL 4900R	Special Topics in Zoology (1-4)
ZOOL 4910R	Special Topics in Biomedical Sciences (1-4)
MICR 4300	Pathogenic Microbiology (4)
CHEM 3605	Biological Chemistry Lab (1)
CHEM 4800	Pharmacology (3)

¹ Minimum of 3-11 credits of Upper Division courses depending on elective choices (See Graduation Requirements)

Graduation Requirements

Complete the required minimum 120 credit hours.

If an AA or AS degree has been earned, a maximum of 64 of these credits may apply toward the BS.

At least 30 credit hours in residence at UVU or satellite sites are required, with 10 hours earned during the last 45 hours.

A minimum of 40 credits must be upper-division (numbered 3000 or above).

A minimum of 40 credits must be in the major (BIOL, BOT, BTEC, MICR, or ZOOL prefixes), 30 of which must be upper-division. A minimum of nine Department credits must be taken at UVU.

Except for 4900R or 4910R Special Topics courses, a maximum cumulative total of 9 credits in any combination of upper division Departmental courses with an "R" designation may count toward graduation.

Complete Biology Department core courses with a grade of "C-" or higher in each course.

Achieve a minimum overall GPA of 2.0 with a minimum GPA of 2.25 in biology department courses.

Complete the appropriate application for graduation form.

Successful completion of at least one Global/Intercultural course.

Successful completion of at least two Writing Enriched (WE) courses.

Complete Departmental Assessment conducted by the Dept. of Biology Assessment Coordinator.

Complete an exit survey administered by the Biology Department.

Graduation Plan

This graduation plan is a sample plan and is intended to be a guide. Your specific plan may differ based on your Math and English placement and/or transfer credits applied. You are encouraged to meet with an advisor and set up an individualized graduation plan in Wolverine Track (<http://www.uvu.edu/wolverinetrack/>).

First Year

Semester 1

		Credit Hours
BIOL 1610 or BIOL 1610H	College Biology I or College Biology I	4
BIOL 1615	College Biology I Laboratory	1
ENGL 1010	Introduction to Academic Writing	3
MATH 1050	College Algebra	4

FINE ARTS		3
	Credit Hours	15
Semester 2		
ENGL 2010	Intermediate Academic Writing	3
CHEM 1210 & CHEM 1215	Principles of Chemistry I and Principles of Chemistry I Laboratory	5
HUMANITIES		3
SOCIAL/BEHAVIORAL SCIENCE		3
Elective		2
	Credit Hours	16
Second Year		
Semester 3		
HISTORY GE		3
BIOL 3500	Genetics	3
CHEM 1220 & CHEM 1225	Principles of Chemistry II and Principles of Chemistry II Laboratory	5
ZOOL 2320 & ZOOL 2325	Human Anatomy and Human Anatomy Laboratory	4
	Credit Hours	15
Semester 4		
CHEM 2310 & CHEM 2315	Organic Chemistry I and Organic Chemistry I Laboratory	5
Personal, Professional, and Civic Growth GE class		3
ZOOL 2420 & ZOOL 2425	Human Physiology and Human Physiology Laboratory	4
BIOL 4940 or BIOL 4260	Student Seminar or Ethical Issues in Biology	2
	Credit Hours	14
Third Year		
Semester 5		
BIOL 3400	Cell Biology	3
CHEM 2320 & CHEM 2325	Organic Chemistry II and Organic Chemistry II Laboratory	5
STAT 2040 or PSY 3110	Principles of Statistics or Statistics for the Behavioral Sciences	4
Discipline Core Electives/ General Electives		3
	Credit Hours	15
Semester 6		
PHYS 2010 & PHYS 2015	College Physics I and College Physics I Lab	5
BIOL 3600	Biological Chemistry	3
BIOL 4920R	Professional Development	1
Discipline Core Electives/ General Electives		7
	Credit Hours	16
Fourth Year		
Semester 7		
PHYS 2020 & PHYS 2025	College Physics II and College Physics II Lab	5
MICR 2060 & MICR 2065	Microbiology for Health Professions and Microbiology for Health Professions Laboratory	4
BIOL 4560	Evolutionary Medicine	3
Discipline Core Electives/ General Electives		3
	Credit Hours	15
Semester 8		
Discipline Core Electives/ General Electives		14
	Credit Hours	14
	Total Credit Hours	120

Program Learning Outcomes

1. Apply the process of science through the use of hypothesis testing in the design and completion of scientific experiments.
2. Critically evaluate scientific information.
3. Quantitatively analyze scientific data through graph interpretation, statistical analysis, and problem solving.

4. Effectively communicate scientific information in both written and oral formats.
5. Explain fundamental biological concepts in cell biology, anatomy, and physiology, including how they relate to human health and disease.

Medical scientists, except epidemiologists

- Total Positions 146,600
- Field Growth 11.5%
- Median Salary \$100,890
- Average Openings 8.9

Biological technicians

- Total Positions 83,100
- Field Growth 6.6%
- Median Salary \$51,430
- Average Openings 10.3

Biological science teachers, postsecondary

- Total Positions 64,900
- Field Growth 8.4%
- Median Salary \$83,920
- Average Openings 5.6