Biomedical Science, B.S.

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 BB with C- or higher and approval of Biology Department advisor.

Program Requirements

Code	Title	Credit Hours
Total Credit Hours		**120**
General Education Requirements		**39 Credits**
ENGL 1010	Introduction to Academic Writing CC	3
or ENGL 101H	Introduction to Academic Writing CC	
ENGL 2010	Intermediate Academic Writing CC	3
MATH 1050	College Algebra QL	4
or MATH 1055	College Algebra with Preliminaries QL	
Complete one of the following:		3
HIST 2700 & HIST 2710	US History to 1877 AS and US History since 1877 AS (6)	
HIST 1700	American Civilization AS (3)	
HIST 1740	US Economic History AS (3)	
POLS 1000	American Heritage AS (3)	
POLS 1100	American National Government AS (3)	
Complete the following:		
PHIL 2050	Ethics and Values IH	3
or PHIL 205G	Ethics and Values IH GI	
HLTH 1100	Personal Health and Wellness TE	2
or EXSC 1097	Fitness for Life TE	
Distribution Courses:		
BIOL 1610	College Biology I BB	4
CHEM 1210	Principles of Chemistry I PP	4
CHEM 1220	Principles of Chemistry II PP	4
Humanities Distribution		3
Fine Arts Distribution		3
Social/Behavioral Science		3
Discipline Core Requirements		**68 Credits**
BIOL 1615	College Biology I Laboratory	1
CHEM 1215	Principles of Chemistry I Laboratory	1
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 4260	Ethical Issues in Biology WE	2
BIOL 4500	Principles of Evolution WE	3
or BIOL 4550	Molecular Evolution and Bioinformatics WE	
BIOL 4940	Student Seminar WE	2
BIOL 492R	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 PP and College Physics I Lab	5
PHYS 2020 & PHYS 2025	College Physics II PP and College Physics II Lab	5
PSY 3110	Statistics for the Behavioral Sciences	4
or STAT 2040	Principles of Statistics QL	
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 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		4
MICR 2060 & MICR 2065	Microbiology for Health Professions BB and Microbiology for Health Professions Laboratory (4)	
MICR 3450 & MICR 3455	General Microbiology and General Microbiology Laboratory (4)	
Elective Requirements		**13 Credits**
Complete 13 credits from the following: [1]		13
BIOL 1620 & BIOL 1625	College Biology II and College Biology II Laboratory (4)	
BIOL 3200	Guided Research Experience (1-3)	
BIOL 3515	Advanced Genetics Laboratory (1)	
BIOL 3550	Molecular Biology (3)	
BIOL/CHEM 3620	Biological Chemistry II (3)	
BIOL 369R	Introduction to Undergraduate Research (1)	
BIOL 489R	Student Research (1-4)	
BIOL 497R	Biology Colloquium (0.5-1)	
BIOL 499R	Senior Thesis (1-2)	
EXSC 270G	Foundations of Exercise Science GI (3)	
EXSC 3500	Kinesiology (3)	
EXSC 4050	Obesity Physiology and Physical Activity (3)	
MATH 1210	Calculus I QL (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/EXSC 3700	Exercise Physiology (3)
ZOOL/MICR 4100	Parasitology (4)
ZOOL 4500	Comparative Vertebrate Zoology (3)
MICR 4300	Pathogenic Microbiology (4)
CHEM 3605	Biological Chemistry Lab (1)
CHEM 4800	Pharmacology (3)

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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 490R 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.

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 & BIOL 1615	College Biology I BB and College Biology I Laboratory	5
ENGL 1010	Introduction to Academic Writing CC	3
MATH 1050	College Algebra QL	4
FINE ARTS		3
	Credit Hours	**15**
Semester 2		
ENGL 2010	Intermediate Academic Writing CC	3
CHEM 1210 & CHEM 1215	Principles of Chemistry I PP and Principles of Chemistry I Laboratory	5
HUMANITIES		3
SOCIAL/BEHAVIORAL SCIENCE		3
PE/HLTH		2
	Credit Hours	**16**
Second Year		
Semester 3		
HISTORY GE		3
BIOL 3500	Genetics	3

CHEM 1220 & CHEM 1225	Principles of Chemistry II PP and Principles of Chemistry II Laboratory	5
ZOOL 2320 & ZOOL 2325	Human Anatomy and Human Anatomy Laboratory	4
	Credit Hours	**15**
Semester 4		
PHIL 205G	Ethics and Values IH GI	3
CHEM 2310 & CHEM 2315	Organic Chemistry I and Organic Chemistry I Laboratory	5
ZOOL 2420 & ZOOL 2425	Human Physiology and Human Physiology Laboratory	4
BIOL 4940	Student Seminar WE	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	Principles of Statistics QL	4
Discipline Core Electives/ General Electives		3
	Credit Hours	**15**
Semester 6		
PHYS 2010 & PHYS 2015	College Physics I PP and College Physics I Lab	5
BIOL 3600	Biological Chemistry	3
Discipline Core Electives/ General Electives		7
	Credit Hours	**15**
Fourth Year		
Semester 7		
PHYS 2020 & PHYS 2025	College Physics II PP and College Physics II Lab	5
MICR 2060 & MICR 2065	Microbiology for Health Professions BB and Microbiology for Health Professions Laboratory	4
BIOL 4500 or BIOL 4550	Principles of Evolution WE or Molecular Evolution and Bioinformatics WE	3
Discipline Core Electives/ General Electives		3
	Credit Hours	**15**
Semester 8		
BIOL 492R	Professional Development	1
BIOL 4260	Ethical Issues in Biology WE	2
Discipline Core Electives/ General Electives		12
	Credit Hours	**15**
	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.