UTAH VALLEY UNIVERSITY

GRADUATE & UNDERGRADUATE CATALOG

UVU

FALL 2023- SUMMER 2024

Biology

Biology

The Biology department is in the College of Science. To find the most up-to-date information, including Program Learning Outcomes for degree programs offered by the Biology department, visit their website.

Biology department

DEPARTMENT CHAIR

GAZDIK STOFER, Michaela *Associate Professor*

FACULTY

BEUCHER, Margaret *Lecturer*
BROOKS, Lauren *Assistant Professor*
BYBEE, Paul *Professor*
CUSICK, Jessica *Assistant Professor*
DOMYAN, Eric *Assistant Professor*
DUNN, Paul H. *Associate Professor*
EGAN, Ashley *Associate Professor*
FAIRBANKS, Daniel *Professor*
FLOOD, Sara *Associate Professor*
GAZDIK STOFER, Michaela *Associate Professor*
HJELMEN, Carl *Assistant Professor*
HOUGH, Colleen *Associate Professor*
KARAFIATH, Summer *Assistant Professor*
KOPP, Olga R. *Professor*
KUDDUS, Ruhul H. *Professor*
LANEY, Alma Glenn *Assistant Professor*
MUGLESTON, Joseph *Lecturer*
OGDEN, T. Heath *Associate Professor*
OTALORA-LUNA, Fernando *Lecturer*
PRICE, James V. *Professor*
ROTTER, Michael *Assistant Professor*
STEVENS, Michael T. *Professor*
TAUZIN, Sebastien *Associate Professor*
TAYLOR, Danielle *Assistant Professor*
TAYLOR, Devin *Assistant Professor*
THOMPSON, Zoe *Assistant Professor*
TONGA, Lavon *Lecturer*
WHALEY, Wayne *Professor*
WILSON-ASHWORTH, Heather A. *Professor*
WYATT, Brittney *Assistant Professor*
ZAHN, Geoffrey *Assistant Professor*

Course Descriptions

Degrees & Programs

Biology, A.A.

Requirements

Students interested in biology, or related fields, are encouraged to earn at least a baccalaureate degree (BS). Many professions (e.g., Pharmacy or Medicine) require additional post-baccalaureate education. The AS/AA degree is intended for students who plan to use it as a first step toward a baccalaureate degree. The AS/AA degree may be granted to those who do not continue in a bachelor's program and meet the minimum requirements.

Total Program Credits: 60

General Education Requirements:			39 Credits
	ENGL 1010	Introduction to Academic Writing CC	3
or	ENGH 1005	Literacies and Composition Across Contexts CC (5.0)	
	ENGL 2010	Intermediate Academic Writing CC	3
	MATH 1050	College Algebra QL	4
or	MATH 1055	College Algebra with Preliminaries QL (5.0)	
Complete one of the following:			3
	HIST 2700	US History to 1877 AS (3.0)	
and	HIST 2710	US History since 1877 AS (3.0)	
	HIST 1700	American Civilization AS (3.0)	
	HIST 1740	US Economic History AS (3.0)	
	POLS 1000	American Heritage SS (3.0)	
	POLS 1100	American National Government AS (3.0)	
Complete the following:			
	PHIL 2050	Ethics and Values IH	3
or	PHIL 205G	Ethics and Values IH GI (3.0)	
	HLTH 1100	Personal Health and Wellness TE (2.0)	
or	EXSC 1097	Fitness for Life TE	2
Distribution Courses:			
	BIOL 1610	College Biology I BB (To be taken with BIOL 1615)	4
	CHEM 1210	Principles of Chemistry I PP (To be taken with CHEM 1215)	4
	CHEM 1220	Principles of Chemistry II PP (To be taken with CHEM 1225)	4
	Humanities Distribution		3
	Fine Arts Distribution		3
	Social/Behavioral Science		3
Discipline Core Requirements:			13 Credits
Complete the following:			
	BIOL 1615	College Biology I Laboratory (To be taken with BIOL 1610)	1
	BIOL 1620	College Biology II	3
and	BIOL 1625	College Biology II Laboratory	1
	CHEM 1215	Principles of Chemistry I Laboratory (To be taken with CHEM 1210)	1

	CHEM 1225	Principles of Chemistry II Laboratory (To be taken with CHEM 1220)	1
	Minimum of 2 additional biology courses (BIOL, BOT, BTEC, MICR, or ZOOL prefixes).[1]		6
Elective Requirements:			8 Credits
	Same Foreign Language.		8

Graduation Requirements:

1. Completion of a minimum of 60 semester credits.
2. Overall grade point average of 2.0 (C) or above. (Departments may require a higher GPA.)
3. Residency hours -- minimum of 20 credit hours through course attendance at UVU.
4. Completion of GE and specified departmental requirements.
5. For the AA degree, completion of 8 credit hours of course work from one language.

Footnote
[1] BIOL 1010 cannot be used to meet this requirement. See Biology Advisor

Biology, A.A.
Careers

1. Demonstrate knowledge of cellular biology.
2. Demonstrate a knowledge of molecular genetics and principles of inheritance.

Related Careers

- Natural Sciences Managers
- Biological Scientists, All Other
- Life Scientists, All Other
- Biological Science Teachers, Postsecondary
- Secondary School Teachers, Except Special and Career/Technical Education

Biology, A.S.

Requirements

Students interested in biology, or related fields, are encouraged to earn at least a baccalaureate degree (BS). Many professions (e.g., Pharmacy or Medicine) require additional post-baccalaureate education. The AS/AA degree is intended for students who plan to use it as a first step toward a baccalaureate degree. The AS/AA degree may be granted to those who do not continue in a bachelor's program and meet the minimum requirements.

Total Program Credits: 60

General Education Requirements:			39 Credits
	ENGL 1010	Introduction to Academic Writing CC	3
or	ENGH 1005	Literacies and Composition Across Contexts CC (5.0)	
	ENGL 2010	Intermediate Academic Writing CC	3
	MATH 1050	College Algebra QL	4
or	MATH 1055	College Algebra with Preliminaries QL (5.0)	
Complete one of the following:			3
	HIST 2700	US History to 1877 AS (3.0)	
and	HIST 2710	US History since 1877 AS (3.0)	
	HIST 1700	American Civilization AS (3.0)	
	HIST 1740	US Economic History AS (3.0)	
	POLS 1000	American Heritage SS (3.0)	
	POLS 1100	American National Government AS (3.0)	
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 (2.0)	
or	EXSC 1097	Fitness for Life TE	2
Distribution Courses:			
	BIOL 1610	College Biology I BB (To be taken with BIOL 1615)	4
	CHEM 1210	Principles of Chemistry I PP (To be taken with CHEM 1215)	4
	CHEM 1220	Principles of Chemistry II PP (To be taken with CHEM 1225)	4
	Humanities Distribution		3
	Fine Arts Distribution		3
	Social/Behavioral Science		3
Discipline Core Requirements:			13 Credits
Complete the following:			
	BIOL 1615	College Biology I Laboratory (To be taken with BIOL 1610)	1
	BIOL 1620	College Biology II	3
and	BIOL 1625	College Biology II Laboratory	1
	CHEM 1215	Principles of Chemistry I Laboratory (To be taken with CHEM 1210)	1
	CHEM 1225	Principles of Chemistry II Laboratory (To be taken with CHEM 1220)	1
	Minimum of 2 additional biology courses (BIOL, BOT, MICR, or ZOOL prefixes).[1]		6
Elective Requirements:			8 Credits
	Complete any course 1000 or higher. See Biology Advisor.		8

Graduation Requirements:

1. Completion of a minimum of 60 semester credits.
2. Overall grade point average of 2.0 (C) or above. (Departments may require a higher GPA.)
3. Residency hours -- minimum of 20 credit hours through course attendance at UVU.
4. Completion of GE and specified departmental requirements.

Footnote
[1]BIOL 1010 cannot be used to meet this requirement. See Biology Advisor.

Biology, A.S.
Careers

1. Demonstrate knowledge of cellular biology.
2. Demonstrate a knowledge of molecular genetics and principles of inheritance.

Related Careers

- Natural Sciences Managers
- Biological Scientists, All Other
- Life Scientists, All Other
- Biological Science Teachers, Postsecondary
- Secondary School Teachers, Except Special and Career/Technical Education

Biology, Minor

Requirements

The minor is a way for students to investigate the Biology Degree.

Total Program Credits: 21

Matriculation Requirements:			
1. Admitted to a bachelor degree program at UVU.			
Discipline Core Requirements:			21 Credits
Complete the following with a grade of C- or better:			
	BIOL 1610	College Biology I BB	4
	BIOL 1615	College Biology I Laboratory	1
	BIOL 1620	College Biology II	3
	BIOL 1625	College Biology II Laboratory	1
Complete 12 upper-division credits from any BIOL, BOT, MICR, or ZOOL courses with a grade of C- or higher in each. BIOL 489R, BIOL 499R, cannot be used to meet this requirement. [1]			12
Notes:			
1. BIOL 489R Student Research, BIOL 499R Senior Thesis, cannot be used to meet this requirement.			

Biology, Minor

Careers

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 including cell biology, genetics, evolution, ecological principles, organismal biology, and biodiversity.
6. Apply scientific concepts both across and outside of biology that demonstrate interdisciplinary understanding.

Related Careers

- Natural Sciences Managers
- Biological Scientists, All Other
- Life Scientists, All Other
- Biological Science Teachers, Postsecondary
- Secondary School Teachers, Except Special and Career/Technical Education

Bioinformatics, B.S.

Requirements

Bioinformatics is the fastest growing field in Biology. In general terms, bioinformatics is the synthesis of computational methods and biological systems and comprises many sub-fields that approach different questions in biology. A Bachelor of Science in Bioinformatics will prepare students to enter a variety of fields such as: medical informatics and interventions, new agricultural paradigms, pharmaceutical discovery, and molecular genealogy predictions, among others. This degree would provide students with the knowledge, skills, and experience to be competitive for both graduate school and employment opportunities.

Total Program Credits: 120

Matriculation Requirements:			
BIOL 1610 College Biology BB with C- or higher CS 1400 Fundamentals of Programming with a C+ or higher, and Approval of Biology Department or Computer Science Department advisor.			
General Education Requirements:			39 Credits
	ENGL 1010	Introduction to Academic Writing CC	3
or	ENGH 1005	Literacies and Composition Across Contexts CC (5)	
	ENGL 2010	Intermediate Academic Writing CC	3
	MATH 1050	College Algebra QL	4
or	MATH 1055	College Algebra with Preliminaries QL (5)	
Complete one of the following:			3
	HIST 2700	US History to 1877 AS (3)	
and	HIST 2710	US History since 1877 AS (3)	
	HIST 1700	American Civilization AS (3)	
	HIST 1740	US Economic History AS (3)	
	POLS 1000	American Heritage SS (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 (3)	
	HLTH 1100	Personal Health and Wellness TE (2)	
or	EXSC 1097	Fitness for Life TE	2
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:			50 Credits
	BIOL 1011	Introduction to Bioinformatics BB	3
	BIOL 1615	College Biology I Laboratory	1
	BIOL 3500	Genetics	3
	BIOL 3550	Molecular Biology	3
	BIOL 3100	Introduction to Data Analysis for Biologists	3
	BIOL 492R	Professional Development	1
	BIOL 494R	Student Seminar WE	2