

BIOLOGY B.A.

All students must meet the Degree and University Requirements.

All students must meet the Catamount Core Curriculum Requirements.

All students must meet the College Requirements.

In the Bachelor of Arts program, Biology majors may choose from 3 concentrations:

- Concentration in General Biology (p. 1)
- Concentration in Ecology and Evolutionary Biology (p. 2)
- Concentration in Cell and Developmental Biology (p. 3)

MAJOR REQUIREMENTS

The Bachelor of Arts in Biology offers three concentrations. Students with an interest in studying the breadth of biology should declare a concentration in General Biology. Students wishing to focus on ecosystems and evolutionary principles should declare an Ecology and Evolution concentration. Students wishing to focus on courses in cell biology and developmental biology, including genetics and neurobiology, should declare a Cell and Developmental Biology concentration. Pre-health students can declare any of the three concentrations and are advised to consult the pre-health website and their academic advisor for specific course selections in order to complete all required courses for a given pre-health professional program.

Concentration in General Biology

At least 31 credits in major courses, plus 18-23 credits in ancillary courses, including:

Requirement Description		Credits
FOUNDATIONS		
BIOL 1070	First-year Biology Seminar	1
Fundamental Biology. Choose 1 of the following options:		8
Option A:		
BCOR 1400 & BCOR 1450	Exploring Biology 1 and Exploring Biology 2	
Option B:		
BIOL 1000 & BIOL 1005	AP Biology 1 and AP Biology 2	
Option C:		
BIOL 1000 & BCOR 1425	AP Biology 1 and Accelerated Biology	
Option D:		

BIOL 1400 & BIOL 1450	Principles of Biology 1 and Principles of Biology 2	
Fundamental Chemistry. Choose 1 of the following options:		12-16
Option A:		
CHEM 1400 & CHEM 1450 & CHEM 1580	General Chemistry 1 and General Chemistry 2 and Intro Organic Chemistry w/lab	
Option B:		
CHEM 1400 & CHEM 1450 & CHEM 2580 & CHEM 2585	General Chemistry 1 and General Chemistry 2 and Organic Chemistry 1 and Organic Chemistry 2	
Calculus. Choose 1 of the following:		3-4
MATH 1212	Fundamentals of Calculus I	
MATH 1234	Calculus I	
STAT 1410	Basic Statistical Methods 1	
CORE COURSES		
BCOR 2100	Ecology and Evolution	4
BCOR 2300	Genetics	3
BCOR 2500	Molecular & Cell Biology w/lab	4
BIOL 4405	Comparative Physiology	4
BIOL 4070	Sr Seminar in General Biology	1
ADVANCED ELECTIVES		
At least two of the Advanced Elective courses must be from the BIOL prefix. Only one of the courses may be at the 2000-level.		
Category A (lecture only). 1 additional course/3 credits from the following:		3
BIOL numbered 3100 to 3699		
ANTH 3560, ASCI 3080, ASCI 3150, ASCI 3180, BHSC 3420, BHSC 3440, BHSC 3810, BHSC 3820, BIOC 3001, BIOC 3005, BIOC 3006, BIOC 3063, BIOC 3075, BME 3340, CSD 3810, MATH 4788, MATH 5788, MLS 3300, MMG 3050, MMG 3060, MMG 3110, MMG 3200, MMG 3210, MMG 3230, MMG 3250, MMG 3270, MMG 3300, MMG 3310, MMG 3320, MMG 3330, NFS 3203, NSCI 3220, NSCI 3230, NSCI 3250, NSCI 3500, PBIO 3090, PBIO 3220, PBIO 3750, PBIO 3880, PBIO 5220, PBIO 5940, PHRM 3000, PHRM 3010, PHRM 3720, PHRM 3900, PHRM 5400, PSYS 3202, PSYS 3205, PSYS 3210, PSYS 3250, SEP 4200, SEP 4280, WFB 4320, WFB 4750		
BIOL numbered 2100 to 2699		

ANTH 2152, ANTH 2170, ANTH 2191, ANTH 2410, ANTH 2440, ASCI 2120, ASCI 2700, ECON 2240, MMG 2040, NSCI 2105, PATH 2010, PBIO 2890, PSYS 2100, PSYS 2200, SOC 2450, WFB 2300, WFB 2310	
Category B (lecture with lab). 1 additional course/4 credits from the following:	4
BIOL numbered 4100 to 4699	
ALE 3680, ASCI 2110, (BHSC 3420 and BHSC 3440), (BHSC 3810 and BHSC 3820), (BIOC 3001 and BIOC 3003), BIOC 3030, CSD 2010, MLS 3200, MMG 2010, MMG 3010, (MMG 3060 and MMG 3070), MMG 3220, (NFS 3203 and NFS 3204), NR 4680, NSCI 2100, PBIO 2040, PBIO 2080, PBIO 2090, PBIO 2170, PBIO 2770, PSYS 3200, SEP 4500, SEP 4800, WFB 2410, WFB 3240, WFB 3610, WFB 4830	
1 additional course/3-4 credits from Category A or Category B	3-4
Additional courses, including Special Topics and graduate-level courses, may be accepted as electives with prior approval from the Biology Department. Graduate courses are often open to upper-level undergraduate students with instructor permission.	

Concentration in Ecology and Evolution

At least 29 credits in major courses, plus 14-26 credits in ancillary courses, including:

Requirement Description	Credits
FOUNDATIONS	
BIOL 1070 First-year Biology Seminar	1
Fundamental Biology. Choose 1 of the following options:	8
Option A:	
BCOR 1400 & BCOR 1450 Exploring Biology 1 and Exploring Biology 2	
Option B:	
BIOL 1000 & BIOL 1005 AP Biology 1 and AP Biology 2	
Option C:	
BIOL 1000 & BCOR 1425 AP Biology 1 and Accelerated Biology	
Option D:	
BIOL 1400 & BIOL 1450 Principles of Biology 1 and Principles of Biology 2	
Fundamental Chemistry. Choose 1 of the following options:	8-16
Option A:	
CHEM 1100 & CHEM 1580 Outline: General Chem w/lab and Intro Organic Chemistry w/lab	
Option B:	

CHEM 1400 & CHEM 1450 & CHEM 1580	General Chemistry 1 and General Chemistry 2 and Intro Organic Chemistry w/lab	
Option C:		
CHEM 1400 & CHEM 1450 & CHEM 2580 & CHEM 2585	General Chemistry 1 and General Chemistry 2 and Organic Chemistry 1 and Organic Chemistry 2	
Calculus. Choose 1 of the following:		3-4
MATH 1212	Fundamentals of Calculus I	
MATH 1234	Calculus I	
Statistics.		6
STAT 1410	Basic Statistical Methods 1	
Choose 1 of the following:		
STAT 2830	Basic Statistical Methods 2	
STAT 2870	Basics of Data Science	
STAT 3010	Stat Computing&Data Anlysis	
CORE COURSES		
BCOR 2100	Ecology and Evolution	4
BCOR 2300	Genetics	3
BIOL 3105	Community Ecology	3
BIOL 3165	Evolution	3
BIOL 4075	Sr Seminar in Eco and Evo	1
ADVANCED ELECTIVES		
At least two of the Advanced Elective courses must be from the BIOL prefix. Only one of the courses may be at the 2000-level.		
Category A (lecture only). 1 additional course/3 credits from the following:		3
BIOL numbered 3100 to 3499		
MATH 5788, MMG 3200, PBIO 3090, PBIO 3220, PBIO 3320, PBIO 5220, PBIO 5940, SEP 4200, SEP 4280, WFB 3240, WFB 4320, WFB 4750		
BIOL numbered 2100 to 2499		
ANTH 2152, ANTH 2170, ANTH 2191, ANTH 2410, ANTH 2440, ASCI 2600, ASCI 2700, ECON 2240, SOC 2450, WFB 2300, WFB 2310		
Category B (lecture with lab). 1 additional course/4 credits from the following:		4
BIOL numbered 4100 to 4499		

NR 4500, NR 4800, WFB 4830	
MMG 2010, PBIO 2040, PBIO 2080, PBIO 2090, PBIO 2770	
1 additional course/3-4 credits from Category A or Category B	3-4
Additional courses, including graduate-level courses, may be accepted as electives with prior approval from the Biology Department. Graduate courses are often open to upper-level undergraduate students with instructor permission.	

Concentration in Cell and Developmental Biology

At least 29 credits in major courses, plus 18-23 credits in ancillary courses, including:

Requirement Description	Credits	
FOUNDATIONS		
BIOL 1070	First-year Biology Seminar	1
Fundamental Biology. Choose 1 of the following options:		8
Option A:		
BCOR 1400 & BCOR 1450	Exploring Biology 1 and Exploring Biology 2	
Option B:		
BIOL 1000 & BIOL 1005	AP Biology 1 and AP Biology 2	
Option C:		
BIOL 1000 & BCOR 1425	AP Biology 1 and Accelerated Biology	
Option D:		
BIOL 1400 & BIOL 1450	Principles of Biology 1 and Principles of Biology 2	
Fundamental Chemistry. Choose 1 of the following options:		12-16
Option A:		
CHEM 1400 & CHEM 1450 & CHEM 1580	General Chemistry 1 and General Chemistry 2 and Intro Organic Chemistry w/lab	
Option B:		
CHEM 1400 & CHEM 1450 & CHEM 2580 & CHEM 2585	General Chemistry 1 and General Chemistry 2 and Organic Chemistry 1 and Organic Chemistry 2	
Calculus. Choose 1 of the following:		3-4
MATH 1212	Fundamentals of Calculus I	
MATH 1234	Calculus I	

STAT 1410	Basic Statistical Methods 1	
CORE COURSES		
BCOR 2300	Genetics	3
BCOR 2500	Molecular & Cell Biology w/lab	4
BIOL 3530	Cell Biology and Disease	3
BIOL 3560	Developmental Biology	3
BIOL 4080	Sr Seminar in Cell and Dev	1
ADVANCED ELECTIVES		
At least two of the Advanced Elective courses must be from the BIOL prefix. Only one of the courses may be at the 2000-level.		
Category A (Cell Biology). 1 additional course/3 credits from the following:		3
BIOL numbered 3530 to 3559		
BIOL 3505, ASCI 3180, BHSC 3420, BHSC 3810, BIOC 3001, BIOC 3005, BIOC 3006, BIOC 3030, BIOC 3075, MLS 3200, MMG 2040, MMG 3010, MMG 3050, MMG 3060, MMG 3230, NSCI 2105, NSCI 2100, NSCI 3220, NSCI 3230, PHRM 3900, PHRM 5400		
Category B (Developmental Biology). 1 additional course/4 credits from the following:		4
BIOL numbered 3560 to 3589		
ASCI 3150, BIOL 3500, BIOL 3510, BIOL 4630, NSCI 3500, PBIO 3880		
1 additional course/3-4 credits from the following:		3-4
the Category A list		
the Category B list		
BIOL numbered 4400 to 4699		
BIOL 3400	Topics in General Biology	
BIOL 3600	Topics in Cell & Developmental	
Additional courses, including graduate-level courses, may be accepted as electives with prior approval from the Biology Department. Graduate courses are often open to upper-level undergraduate students with instructor permission.		

RESTRICTIONS

Students completing the B.A. in Biology may not also receive the B.S. in Biological Science in either the College of Arts & Sciences or the College of Agriculture & Life Sciences, the B.S. in Neuroscience, or the B.S. in Zoology.

PRE/CO-REQUISITES

Introductory and intermediate courses for various subject areas may be necessary to reach some of the courses that can be applied to the major as Advanced Electives.

OTHER INFORMATION

In the College of Arts and Sciences (CAS), only one course may overlap between a major and a minor or between two CAS majors.

Courses for the major and/or its pre/co-requisites that are cross-listed in the catalog or schedule of courses under another course prefix may be taken under that other prefix and still count for these requirements.

With the approval of the chair/director, courses that applied to the major in previous years but have since been deactivated may be applied to this year's major requirements if they are reactivated.

For a Bachelor of Arts degree, no more than 45 credits in courses with the same departmental prefix may be used toward completion of the 120 credits required for graduation.

At least half of the credits used to complete major requirements must be taken at the University of Vermont.