UNLV College of SCIENCES

BS Biology w/Ecology and Evolutionary Concentration 2017-2018

School of Life Sciences

Catalog Year: Fall 2017-2018 ♦ Catalog Expires: Summer 2028 ♦ Graduation: Spring 2021

			UNLV	*College*
Biological Sciences majors must complete BIOL 196, BIOL 197, CHEM 121A, 121L, CHEM 122A, 122L, MATH 181 or MATH 127 or MATH 128, ENG 102 or ENG 114 or HON 100 with a C or better (C- is not sufficient) as prerequisites for enrollment in any upper division biology course.			120 Total credits	40 credits 300-400 level
General Education	First Year Seminar		2	
	Second Year Seminar		3	
	ENG 101 English Composition I		3	
	ENG 102 English Composition II		3	
	US/NV Constitution HIST 100 or PSC 101		4	
	Humanities Field 1		3	
	Humanities Field 2		3	
	Fine Arts		3	
	Social Science Field 1		3	
	Social Science Field 2		3	
	Social Science Field 3		3	
	MulticulturalΔ		0	
	InternationalΔ		0	
	Milestone Experience BIOL 351 in the Biology Core		0	
	Culminating Experience BIOL 415 in the Biology Core		0	
Major	**Biology Core:**			
	BIOL 196 Modern Biology I		4	
	BIOL 197 Modern Biology II		4	
	BIOL 351 Microbiology		4	4
	BIOL 300 Genetics OR BIOL 304 Molec Genetics		4	4
	BIOL 415 Evolution		3	3
	Biology Upper Division: at least 24 credits			
	BIOL 341 - Principles of Ecology		3	3
	A minimum of three courses from: BIOL 301, 305, 412, 418, 427, 438, 441, 444, 487, 490, 320, 432, 434, 486		9	9
	Remaining credits (to total of 24) selected from course focus lists A - C. Overall minimum of one course from each list A - C		12	12
	Up to 4 credits of BIOL 492 may be used toward concentration total of 24 credits. Up to 2 credits total of BIOL 494 and/or BIOL 499 may be used as electives to satisfy 120 credit total.			
	CHEM121A & 121L General Chemistry I		4	
	CHEM122A & 122L General Chemistry II		4	
	CHEM241L Organic Chemistry I & CHEM241 Organic Chemistry I lab		4	
	CHEM242 Organic Chemistry II & CHEM 242L Organic Chemistry II lab		4	
	CHEM 474 Biochemistry I (CHEM 475 recommended)		3	3
	MATH181 Calculus I		4	
	PHYS 151/151L General Physics I		4	
	PHYS 152/152L General Physics II		4	
	STAT 391 - Applied Statistics for Biological Sciences OR STAT 491 - Statistics for Scientists I		3	3
Elec	General Electives 100-400 level (MATH 182 recommended)		10	
		Total Credits:	**120**	**41**

ΔA minimum of six (6) credits are required, to be composed of a three-credit multicultural course and a three-credit international course that may simultaneously fulfill other general education requirements. A single course may not simultaneously meet both the multicultural and international requirements. Discuss with your Academic Advisor!

It is strongly recommended that students interested in biomedicine or attending graduate school take additional appropriate upper-division biology courses and research units to meet their elective credit requirements.

The minimum number of semester credits required for a bachelor's degree for a student graduating under the regulations of the 2016 - 2017 Undergraduate Catalog is 120. At least half of the credits required for a baccalaureate degree at the institution must be earned at a four-year institution.

A candidate for the baccalaureate degree must complete the last 30 UNLV semester credits in uninterrupted resident credit as a declared major in the degree-granting college. A student must declare a major prior to enrolling in their last 30 UNLV resident credits.

In order to graduate, an undergraduate student must have a minimum cumulative grade point average of 2.00 for the total of all college-level credit attempted at the University of Nevada, Las Vegas (UNLV GPA). College and department GPA requirements must also be met.

UNLV ACADEMIC ADVISING
Collaborate to Graduate

College of Sciences Advising Center: MPE A-130; 702-895-2077; www.unlv.edu/sciences/advising; sci.advising@unlv.edu

School of Life Sciences: WHI-101; 702-895-3390; www.unlv.edu/lifesciences; biology.help@unlv.edu

Upper Division Biology Lists for the 2017-2018 Catalog

Biology Course Lists for Upper Division Degree Requirements

Courses that appear on more than one List cannot count toward two list requirements. BIOL 300 can be used only toward the Biology Core requirement. BIOL 304 may be used toward EITHER the Biology Core requirement OR List B. **Fall 2015 catalog: BIOL 492, -493, 494, 496, 499: read your Degree Audit in MyUNLV for restrictions that apply**			CREDITS	**List A**: Focus on cell Structure and Function	**List B**: Focus on Organismal Structure and Function	**List C**: Focus on Biological Diversity
BIOL	301	Fossil Record	3			X
BIOL	305	Introduction to Conservation Biology	3			X
BIOL	320	Invertebrate Zoology	4			X
BIOL	341	Principles of Ecology	3			X
BIOL	348	Human Anatomy	3		X	
BIOL	360	Biomathematics I	3	X	X	X
BIOL	403	Restoration Ecology (BIOL 420X)	3			X
BIOL	403X	Biological Discoveries	3			X
BIOL	405	Molecular Biology	3	X		
BIOL	406X	Biotechnology	3	X		
BIOL	409	Virology	3	X		
BIOL	411	Forest Ecology	3			X
BIOL	413	Scientific Writing	3			X
BIOL	412	Molecular Evolution	3			X
BIOL	414	Endocrinology	3		X	
BIOL	417	Biochemical Adaptations	3		X	
BIOL	419	Forest Ecology	3	X		
BIOL	418	Microbial Ecology	3			X
BIOL	420X	Restoration Ecology (BIOL 403)	3			X
BIOL	425	Genomics	3	X		
BIOL	426	Plant Anatomy	3		X	
BIOL	427	Bryology	3			X
BIOL	428X	Principles of Regeneration Biology	3			X
BIOL	432	Herpetology	4			X
BIOL	434	Mammalogy	4			X
BIOL	437	Entomology	4			X
BIOL	438	Soil Plant Water Relations in Arid Env	3			X
BIOL	440	Mammalian Physiology	3		X	
BIOL	441	Field Ecology	3			X
BIOL	442	Principles of Plant Physiology	4		X	
BIOL	444	Principles of Plant Ecology	3			X
BIOL	445	Cell Physiology	3	X		
BIOL	447	Adv Comparative Animal Physiology	3		X	
BIOL	455	Comparative Vertebrate Anatomy	5		X	
BIOL	453	Immunology	3		X	
BIOL	458	Stem Cells & Regeneration Biology	3	X		
BIOL	458X	Principles of Regeneration Biology	3	X		
BIOL	460	Microbial Physiology	3	X		
BIOL	461X	Prokaryotic Diversity	3			X
BIOL	464	Bacterial Pathogenesis	3	X		
BIOL	466	Developmental Biology	3	X		
BIOL	468	Histology	4		X	
BIOL	470	Topics in Applied Microbiology	3	X		
BIOL	473	Adv Topics in Cell and Molecular Biology	3	X		
BIOL	474X	RNA Biology	3	X		
BIOL	475	Neurobiology	3		X	
BIOL	478	Cancer Cell Biology	3	X		
BIOL	480	Introduction to Biological Modelling	3		X	
BIOL	485	Microbial Genetics	3	X		
BIOL	486	Animal Behavior	3			X
BIOL	487	Principles of Systematics	3			X
BIOL	490	Biogeography	3			X
			Totals	11	10	15
BIOL	492	Undergraduate Research	1	read your Degree Audit in MyUNLV for restrictions that apply		
BIOL	493	Undergraduate Seminar	1			
BIOL	494	Biology Colloquium	1			
BIOL	496	Advanced Topics in Modern Biology	1			
BIOL	499	Undergraduate Teaching Assistant	1			

Lower Division Prerequisites.
Students are required to complete the following prerequisite courses with a grade of "C" or higher before they are eligible to enroll in upper division (300-400 level) biology classes: BIOL 196, BIOL 197, CHEM 121/121L or CHEM 121A+121L, CHEM 122/122L or CHEM 122A+122L, MATH 127 or 128 or higher, ENG 102 or HON 100 or ENG 114.

NSHE Transfers
Only credits transfer to UNLV from other institutions; grades do not transfer and do not affect GPA at UNLV (this includes other Nevada institutions). If you receive a passing grade at UNLV and you choose to retake the class, you must do so at UNLV, not at CCSN or other NSHE institutions; if you fail a class at UNLV, you may retake the class at CSN or other NSHE institutions. BIOL 251G (Honors Microbiology) from CSN may fill a requirement for BIOL 351 (BS Biology) at UNLV.

Credit Load
The university considers 15 semester credits as the minimum full-time undergraduate credit load. The maximum credits allowed during a regular semester are 17 for freshmen level, and 18 for sophomore, junior, and senior levels. Overloads are available on a case-by-case basis for sophomores, juniors and seniors who have a GPA 3.0 or higher.

Four- and five-year degree plans can be found at http://sciences.unlv.edu/advising/degreeworksheets

Biomedicine or Graduate School
It is strongly recommended that students interested in biomedicine or graduate school take additional appropriate upper-division biology courses and research units to meet their elective credit requirements. Make an appointment to see the Pre-health Advisor. 702-895-2077

Four- and five-year degree plans can be found at http://sciences.unlv.edu/advising/degreeworksheets

B.S. Biology
To earn a Bachelor of Science degree in Biology, students must satisfy the general education core curriculum required by the university and the College of Sciences, plus the program requirements of the Department of Life Sciences. The departmental program includes courses in biology, chemistry, physics and mathematics. Biology majors choose one of five areas of concentration as shown below.

The Cell & Molecular concentration pro-vides Biological Sciences majors with the intellectual tools essential for careers in biotechnology and biomedical science research, as well as for transition to graduate PhD programs in Biology, and Cell and Molecular Biomedical research.

The Ecology & Evolution concentration is recommended for those students who desire a strong foundation in evolution, and whose interests are at the interface between organisms and their environments.

The Integrative Physiology concentration provides the biology major with the intellectual and technical tools essential for success in a broad array of life sciences careers including application to all the health care-related professional schools, graduate school, or related postgraduate study as well as biomedical science research. IP provides an in-depth examination of how animals and/or plants work from the molecular/ cellular level of organization to a systems level under-standing and up to the integration of physiology with behavior and evolutionary processes.

The Microbiology concentration pro-vides the biology major with the intellectual and technical skills required for success in the broad area of microbiology which includes clinical, environmental, ecological, evolu-tionary, molecular, metabolic and physiological perspective of microbes, including aspects of virology and immunology.

The Preprofessional concentration provides Biological Sciences majors with the intellectual tools essential for application to health care-related professional schools, including medical, dental, veterinary, optometric and related programs.

Many of the five areas of specialization provides an excellent and well-rounded background for those interested in applying for professional schools including medical, dental, veterinary. Most degrees in biology ensure the course work required for professional school is completed at the time of graduation.