# **BIOLOGY, BACHELOR OF SCIENCE**

To obtain a BS with a major in Biology, a student must fulfill university, college, and departmental requirements.

## Biology, Bachelor of Science Requirements

Code	Title Cr	edits	
GENERAL EDUCATIO Required	N REQUIREMENTS - 34 Hours		
Minimum of "C-"requir	red		
Fundamental Skills		15	
Writing – 6 hrs.			
ENGL 1150	ENGLISH COMPOSITION I		
ENGL 1160	COLLEGE RESEARCH AND INFORMATION LITERACY		
Oral Communicat	tion – 3 hrs.		
CMST 1110	PUBLIC SPEAKING FUNDS		
or CMST 2120	ARGUMENTATION AND DEBATE		
Quantitative Liter	acy – 3 hrs.		
MATH 1120	INTRODUCTION TO MATHEMATICAL AND COMPUTATIONAL THINKING		
or MATH 1130	QUANTITATIVE LITERACY		
or MATH 1140	QUANTITATIVE REASONING FOR HEALTHCARE PROFESSIONALS		
or MATH 1300	COLLEGE ALGEBRA WITH SUPPORT		
Data Literacy – 3	hrs.		
Select one from the	following:		
STAT 1100	DATA LITERACY AND VISUALIZATION		
STAT 1530	ELEMENTARY STATISTICS		
Until Fall 2028, stud approved data liter social science gene	dents can satisfy this requirement with an acy course, or any approved natural or ral education course.		
Breadth of Knowled	ge	13	
Social Science - 3 h	rs.		
Humanities – 3 hrs.			
Natural & Physical	Science (must complete a lab) – 4 hrs.		
Arts – 3 hrs.			
Individual and Socia	ıl Responsibility	6	
Cultural Knowledge	e – 3 hrs.		
Civic Knowledge and Engagement – 3 hrs.			
Major Requirements - 61-68 Hours Required			
**Course will satisfy U	NO's General Education requirement		
^Course requires pre-r	equisite(s)		
<b>Required Biology Co</b>	oursework	21	
BIOL 1450	BIOLOGY I (** ^)		
BIOL 1750	BIOLOGY II (^)		
BIOL 2140	GENETICS (^)		
BIOL 3020	MOLECULAR BIOLOGY OF THE CELL (^)		
BIOL 3340	ECOLOGY (^)		
Additional Biology (	Coursework	12+	
Select one course from Group I and at least three courses from			
Group II (see below) to obtain at least 12 credits of advanced			

have approved laboratories.

Gı	roup I: Structure a	nd Function of Multicellular Systems
	BIOL 3240	INTRODUCTION TO IMMUNOLOGY (^)
	BIOL 4260	BEHAVIORAL ECOLOGY (^)
	BIOL/PSYC 4270	ANIMAL BEHAVIOR (^)
	<b>BIOL/NEUR 4290</b>	NEUROETHOLOGY (^)
	BIOL/PSYC 4320	HORMONES & BEHAVIOR (^)
	BIOL 4440	PLANT PHYSIOLOGY (^)
	BIOL 4710	TOXICOLOGY (^)
	BIOL 4730	VERTEBRATE ENDOCRINOLOGY (^)
	BIOL 4740	ANIMAL PHYSIOLOGY (^)
	BIOL 4830	DEVELOPMENTAL GENETICS (^)
	BIOL 4850	DEVELOPMENTAL BIOLOGY (^)
	BIOL/NEUR 4890	GENES, BRAIN, AND BEHAVIOR (^)
	BIOL 4970	ADVANCED BOTANY (^)
Gı	roup II: Cellular ar	ıd Molecular Biology
	BIOL 3830	BIOLOGY OF PATHOGENIC MICROORGANISMS
	BIOL 4130	MOLECULAR GENETICS (^)
	BIOL 4140	CELLULAR BIOLOGY (^)
	BIOL 4150	CANCER BIOLOGY (^)
	BIOL 4450 & BIOL 4454	VIROLOGY and VIROLOGY LABORATORY (^)
	BIOL 4640 & BIOL 4644	MOLECULAR MICROBIOLOGY and MOLECULAR MICROBIOLOGY LAB (^)
	BIOL/CHEM 4650	BIOCHEMISTRY I (^ with following lab)
	BIOL/CHEM 4654	BIOCHEMISTRY I LABORATORY (^)
	BIOL/CHEM 4660	BIOCHEMISTRY II (^ with the following lab)
	BIOL/CHEM 4664	BIOCHEMISTRY II LABORATORY (^)
	BIOL/NEUR 4810	BEHAVIORAL GENETICS (^)
	BIOL 4760	GENOME TECHNOLOGY AND ANALYSIS (^)
	BIOL 4860	COMPARATIVE GENOMICS (^)
	BIOL/NEUR 4870	MOLECULAR AND CELLULAR NEUROBIOLOGY (^)
	BIOL 4960	ADVANCED GENETICS (^)
Gı	roup II: Structure	and Function of Multicellular
Sy	/stems	
	BIOL 3240	INTRODUCTION TO IMMUNOLOGY (^)
	BIOL/GERO/NEUR 3500	BIOLOGICAL PRINCIPLES OF AGING (^)
	BIOL 4260	BEHAVIORAL ECOLOGY (^)
	BIOL/PSYC 4270	ANIMAL BEHAVIOR (^ optional following lab)
	BIOL/PSYC 4280	ANIMAL BEHAVIOR LABORATORY (^)
	BIOL/NEUR 4290	NEUROETHOLOGY (^)
	BIOL/PSYC 4320	HORMONES & BEHAVIOR (^)
	BIOL 4440	PLANT PHYSIOLOGY (^)
	BIOL 4460	COMPARATIVE IMMUNOLOGY (^)
	BIOL 4710	TOXICOLOGY (^)
	BIOL 4730	VERTEBRATE ENDOCRINOLOGY (^)
	BIOL 4740	ANIMAL PHYSIOLOGY (^)
	BIOL 4830	DEVELOPMENTAL GENETICS (^)
	BIOL 4850	DEVELOPMENTAL BIOLOGY (^)
	<b>BIOL/NEUR 4890</b>	GENES, BRAIN, AND BEHAVIOR (^)
	BIOL 4970	ADVANCED BOTANY (^)

**Group II: Biodiversity** 

	BIOL/ENVN 3030	MICROBIAL ECOLOGY (^)		CHEM 2210	FUNDAMENTALS OF ORGANIC	
	BIOL/GEOL 3100	PALEONTOLOGY (^)	& CHEM 2214	CHEMISTRY		
	BIOL 3530	FLORA OF THE GREAT PLAINS (^)				
	BIOL 3730	FAUNA OF THE GREAT PLAINS (^)		CUEM 2050		
	BIOL 4490	MEDICINAL USES OF PLANTS (^)		& CHEM 3654	and FUNDAMENTALS OF	
	BIOL 4780	VERTEBRATE ZOOLOGY (^)			BIOCHEMISTRY LABORATORY (^)	
	BIOL 4790	MAMMALOGY (^)		<b>Required Physics</b>	Coursework	5-10
	BIOL 4840	HERPETOLOGY (^)		Select one of the f	ollowing sequences in Physics	
	BIOL 4940	ENTOMOLOGY (^)		Sequence 1		
	BIOL 4980	ORNITHOLOGY (^)		PHYS 1050	INTRODUCTION TO PHYSICS	
G	roup II: Ecology Ev	olution and Conservation Biology		& PHYS 1054	and INTRODUCTION TO PHYSICS	
	BIOL 3680 & BIOL 3690	BIOLOGY OF AFRICA and BIOLOGY OF AFRICA LAB (^)		٨	LABORATORY (** ^)	
	BIOL/GEOL/GEOG 4100	BIOGEOGRAPHY (^)		PHYS 1110 & PHYS 1154	PHYSICS FOR LIFE SCIENCE I and GENERAL PHYSICS LABORATORY I	
	BIOL 4120	CONSERVATION BIOLOGY (^)			(** ^)	
	BIOL 4180	FRESHWATER ECOLOGY (^)		PHYS 1120	PHYSICS FOR LIFE SCIENCE II	
	BIOL 4210	FIRE ECOLOGY ( <sup>^</sup> )		& PHYS 1164	and GENERAL PHYSICS LABORATORY II (^)	
	BIOL 4220	POPULATION BIOLOGY (^)		Sequence 3	()	
	BIOL 4230	EVOLUTION (^)		PHYS 2110	GENERAL PHYSICS L. CALCULUS LEVEL	
	BIOL 4240 & BIOL 4250	MARINE BIOLOGY and FIELD MARINE BIOLOGY (^)		& PHYS 1154	and GENERAL PHYSICS LABORATORY I (** ^)	
	BIOL/ENVN 4410	WETLAND ECOLOGY AND MANAGEMENT (^)		PHYS 2120 & PHYS 1164	GENERAL PHYSICS II-CALCULUS LEVEL and GENERAL PHYSICS LABORATORY II	
	BIOL 4420	RESTORATION ECOLOGY (^)			(^)	
	BIOL 4540	PRINCIPLES OF SYSTEMATICS (^)		Select two of the f	ollowing courses in Mathematics or	6
R	equired Chemistry	Coursework	14-16	Computer Science		
S	elect one of the fo	llowing sequences in Chemistry		MATH 1300	COLLEGE ALGEBRA WITH SUPPORT (** )	
Se	equence 1			MATH 1320	COLLEGE ALGEBRA	
	CHEM 1140	FUNDAMENTALS OF COLLEGE		MATH 1330	TRIGONOMETRY (^)	
	& CHEWI 1144	and FUNDAMENTALS OF COLLEGE		MATH 1340	ALGEBRA AND TRIGONOMETRY FOR CALCULUS (^)	
	CHEM 2210 & CHEM 2214	FUNDAMENTALS OF ORGANIC		MATH 1930	CALCULUS FOR THE MANAGERIAL, LIFE, AND SOCIAL SCIENCES (^)	
		and FUNDAMENTALS OF ORGANIC		MATH 1940	CALCULUS FOR BIOMEDICINE (^)	
		CHEMISTRY LABORATORY (^)		MATH 1950		
	CHEM 3650	FUNDAMENTALS OF BIOCHEMISTRY		CSCI 1200	COMPUTER SCIENCE PRINCIPLES (** ^)	
	& CHEM 3654	and FUNDAMENTALS OF BIOCHEMISTRY LABORATORY (^)		CSCI 1620	INTRODUCTION TO COMPUTER SCIENCE II (^)	
Se	equence 2			CIST 1400		
	CHEM 1180	GENERAL CHEMISTRY I		Salact one of the f	ollowing courses in Statistics	2
	& CHEM 1184	and GENERAL CHEMISTRY I LABORATORY (** ^)		BIOL 2020	STATISTICS FOR LIFE AND	3
	& CHEM 1190 & CHEM 1194	and GENERAL CHEMISTRY II I ABORATORY (^)		PSYC 3130	STATISTICS FOR THE BEHAVIORAL	
	CHEM 2250	ORGANIC CHEMISTRY I (^)		SOC 2130	SOCIAL STATISTICS (^)	
	CHEM 2260	ORGANIC CHEMISTRY II (^)		STAT 3000	STATISTICAL METHODS I (^)	
	CHEM 2274	ORGANIC CHEMISTRY LABORATORY (^)		College Breadth (c	choose one option)	<b>15-30</b> +
Se	equence 3			Option 1: Complete	any UNO minor or undergraduate	
	CHEM 1180 & CHEM 1184	GENERAL CHEMISTRY I and GENERAL CHEMISTRY I		certificate - 15+ hour Option 2: Additional	rs General Education Requirements - 18+	
				Hours		
	CHEM 1190			Additional quanti	tative literacy - 3 hours	
	G CHEW 1174	LABORATORY (^)		Additional Social	Science Gen. Ed. from another Discipline - 3	
				Additional Humar hours	nities Gen. Ed. from another Discipline - 3	
				HIST 1000 and HI	51 1010 - 6 hours	

Additional Nat. and Physical Science w/ Lab or without lab - 3-5 hours

Option 3: CAS comprehensive major (50+ hours) OR any second UNO major (30+ hours)

0-15

See Advisor

ELECTIVES

Elective hours as required to reach a total of 120 hours

# Biology, Bachelor of Science Four Year Plan

## Freshman

Fall		Credits		
ENGL 1150	ENGLISH COMPOSITION I	3		
MATH 1300	COLLEGE ALGEBRA WITH SUPPORT (or higher)	4		
BIOL 1450	BIOLOGY I	5		
Attend Durango Day Handshake account assessment. Attend Fair to explore stude appointment for spr develop your Pathwa				
General Education Cou	rse or Elective	3		
	Credits	15		
Spring				
ENGL 1160	COLLEGE RESEARCH AND INFORMATION LITERACY	3		
CMST 1110 or CMST 2120	PUBLIC SPEAKING FUNDS or ARGUMENTATION AND DEBATE	3		
BIOL 1750	BIOLOGY II	5		
Second Math course (3 credits-Consult your advisor for the best options)		3		
Attend campus events such as major exploration week to get an idea of interests and career paths. Schedule a resume review with UNO Career Services. Visit faculty office hours and ask about undergraduate research opportunities. Make advising appointment for summer and fall: February – March.				
Credits		14		
Sophomore				
Fall				
Chemistry Supporting (	Course I (see catalog)	4-5		
Approved Statistics Cou	urse (see catalog)	3		
General Education Cou	rse or Elective	3		
General Education Course or Elective		3		
General Education Course or Elective		3		
Attend the Career & Internship Fair to start networking with employers. Look for volunteer, research, or part-time work to gain experience. Join a student organization or club related to your field or interests. Make advising appointment for spring: Sept Oct.				
	Credits	16-17		
Spring				
Chemistry Supporting (	Course II (see catalog)	4-5		
BIOL 2140	GENETICS	4		
General Education Cou	rse or Elective	3		
Elective	3			

Attend a career fair for informational and networking purposes. Update your resume and LinkedIn profile with new experiences. Investigate and apply for summer internships, research, or study abroad programs. Make advising appointment for summer and fall: February – March.		
	Credits	14-15
Junior		
Fall		
BIOL 3020	MOLECULAR BIOLOGY OF THE CELL	3
BIOL 3340	ECOLOGY (#)	4
Chemistry Supporting	Course III ( see catalog))	3-5
General Education Co	urse or Elective	3
Apply for a paid int	ernship or research assistantship. Attend	
a mock interview w	orkshop or use online interview tools with	
programs or profes continue updating r spring: Sept-Oct.		
	Credits	13-15
Spring		
<b>Chemistry Supporting</b>	Course IV (see catalog) or Elective	3-5
Group II Course with L	ab (see catalog)	4
Elective		3
Elective		3
grad school. Attend the All-Majors Career Fair with a plan to network. Meet with your advisor or submit for a graduation check-in to review remaining degree requirements. Make advising appointment for summer and fall: February – March.		
	Credits	13-15
Senior		
		2
Group I Course (see co	ntalog)	3
Group II Course with Lab (see catalog)		
Flective if needed to re	ach 120	3
Check in with Caree graduate school ap a career fair and st for interviews and s Make advising appo	er Center for networking tips. Finalize plications or job search strategy. Attend art applying for full-time jobs. Prepare salary negotiations with Career Services. ointment for spring: Sept Oct.	
	Credits	15
Spring		
Group II Course (see c	atalog)	3
Physics Course II + Lat	o (see catalog) or Elective	5
Elective	1.400	3
Elective if needed to re	ach 120	3
Elective if needed to re	ach 120	3
request letters of re grad school. Attend network. Meet with check-in to review r advising appointme March.	I the All-Majors Career Fair with a plan to your advisor or submit for a graduation emaining degree requirements. Make ent for summer and fall: February –	

Credits	17
Total Credits	117-123

**College Breadth:** Students should plan on using at least 15 hours of "Electives" to fulfill Option 1, 2, or 3, of the College of Arts and Sciences' breadth requirement.

**Upper Level Credits:** Students need 27 upper level credits throughout the degree with at least 18 upper level credits within the major. Electives may need to be selected at the 3000-4000 level to reach these minimums.

#### **Additional Information About this Plan:**

**University Degree Requirements**: The minimum number of hours for a UNO undergraduate degree is 120 credit hours. Please review the requirements for your specific program to determine all requirements for the program. In order to graduate on-time (four years for an undergraduate degree), you need to take 30 hours each year.

**Placement Exams:** For Math, English, World Language, a placement exam may be required. More information on these exams can be found at https:// www.unomaha.edu/enrollment-management/testing-center/placementexams/information.php

Transfer credit or placement exam scores may change suggested plan of study.

### **GPA Requirements:** 2.0

**Note:** This plan provides a general guide, but your specific courses, experiences, and career goals may differ. Work with your academic advisor to ensure you're meeting degree requirements and consult with career advisors to explore internships, research opportunities, and post-graduation plans. Regular check-ins will help you stay on track and make the most of your time at UNO!