

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	Credits
------	-------	---------

GENERAL EDUCATION REQUIREMENTS - 46 Hours Required

Minimum of "C-" required

Fundamental Academic Skills 15

ENGL 1150	ENGLISH COMPOSITION I
ENGL 1160	ENGLISH COMPOSITION II

Writing in the Discipline Course

CMST 1110	PUBLIC SPEAKING FUNDS
or CMST 2120	ARGUMENTATION AND DEBATE

MATH 1120	INTRODUCTION TO MATHEMATICAL AND COMPUTATIONAL THINKING
or MATH 1100	DATA LITERACY AND VISUALIZATION
or MATH 1130	QUANTITATIVE LITERACY
or MATH 1140	QUANTITATIVE REASONING FOR HEALTHCARE PROFESSIONALS

or MATH 1300	COLLEGE ALGEBRA WITH SUPPORT
or STAT 1100	DATA LITERACY AND VISUALIZATION
or STAT 1530	ELEMENTARY STATISTICS

Distribution Requirements 31

Natural Science - From two disciplines and at least one lab - 7 hrs

Social Science - From two disciplines - 9 hrs

Humanities and Fine Arts - From two disciplines - 9 hrs

Global Diversity - 3 hrs

US Diversity - 3 hrs

Major Requirements - 61-68 Hours Required

**Course will satisfy UNO's General Education requirement

^Course requires pre-requisite(s)

Required Biology Coursework 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 study beyond the Biology Core. Two advanced courses must have approved laboratories.

Group I: Structure and Function of Multicellular Systems

BIOL 3240	INTRODUCTION TO IMMUNOLOGY (^)
BIOL 4260	BEHAVIORAL ECOLOGY (^)
BIOL/PSYC 4270	ANIMAL BEHAVIOR (^)
BIOL/NEUR 4290	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 (^)
-----------	---------------------

Group II: Cellular and Molecular Biology

BIOL 3830	BIOLOGY OF PATHOGENIC MICROORGANISMS
-----------	--------------------------------------

BIOL 4130	MOLECULAR GENETICS (^)
-----------	------------------------

BIOL 4140	CELLULAR BIOLOGY (^)
-----------	----------------------

BIOL 4150	CANCER BIOLOGY (^)
-----------	--------------------

BIOL 4450	VIROLOGY
& BIOL 4454	and VIROLOGY LABORATORY (^)

BIOL 4640	MOLECULAR MICROBIOLOGY
& BIOL 4644	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 (^)
-----------	-----------------------

Group II: Structure and Function of Multicellular Systems

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 (^)
-----------	---------------------------

BIOL/NEUR 4890	GENES, BRAIN, AND BEHAVIOR (^)
----------------	--------------------------------

BIOL 4970	ADVANCED BOTANY (^)
-----------	---------------------

Group II: Biodiversity

BIOL/ENVN 3030	MICROBIAL ECOLOGY (^)
----------------	-----------------------

BIOL/GEOL 3100	PALEONTOLOGY (^ with following lab)
----------------	-------------------------------------

BIOL/GEOL 3104	INVERTEBRATE PALEONTOLOGY LABORATORY (^)
----------------	--

BIOL 3530	FLORA OF THE GREAT PLAINS (^)
-----------	-------------------------------

BIOL 3730	FAUNA OF THE GREAT PLAINS (^)
-----------	-------------------------------

BIOL 4490	MEDICINAL USES OF PLANTS (^)
-----------	------------------------------

BIOL 4780	VERTEBRATE ZOOLOGY (^)
-----------	------------------------

BIOL 4790	MAMMALOLOGY (^)
BIOL 4840	HERPETOLOGY (^)
BIOL 4940	ENTOMOLOGY (^)
BIOL 4980	ORNITHOLOGY (^)
Group II: Ecology Evolution and Conservation Biology	
BIOL 3680 & BIOL 3690	BIOLOGY OF AFRICA and BIOLOGY OF AFRICA LAB (^)
BIOL/GEOL/GEOG 4100	BIOGEOGRAPHY (^)
BIOL 4120	CONSERVATION BIOLOGY (^)
BIOL 4180	FRESHWATER ECOLOGY (^)
BIOL 4210	FIRE ECOLOGY (^)
BIOL 4220	POPULATION BIOLOGY (^)
BIOL 4230	EVOLUTION (^)
BIOL 4240 & BIOL 4250	MARINE BIOLOGY and FIELD MARINE BIOLOGY (^)
BIOL/ENVN 4410	WETLAND ECOLOGY AND MANAGEMENT (^)
BIOL 4420	RESTORATION ECOLOGY (^)
BIOL 4540	PRINCIPLES OF SYSTEMATICS (^)
Required Chemistry Coursework 14-16	
Select one of the following sequences in Chemistry	
Sequence 1	
CHEM 1140 & CHEM 1144	FUNDAMENTALS OF COLLEGE CHEMISTRY and FUNDAMENTALS OF COLLEGE CHEMISTRY LABORATORY (** ^)
CHEM 2210 & CHEM 2214	FUNDAMENTALS OF ORGANIC CHEMISTRY and FUNDAMENTALS OF ORGANIC CHEMISTRY LABORATORY (^)
CHEM 3650 & CHEM 3654	FUNDAMENTALS OF BIOCHEMISTRY and FUNDAMENTALS OF BIOCHEMISTRY LABORATORY (^)
Sequence 2	
CHEM 1180 & CHEM 1184	GENERAL CHEMISTRY I and GENERAL CHEMISTRY I LABORATORY (** ^)
CHEM 1190 & CHEM 1194	GENERAL CHEMISTRY II and GENERAL CHEMISTRY II LABORATORY (^)
CHEM 2250	ORGANIC CHEMISTRY I (^)
CHEM 2260	ORGANIC CHEMISTRY II (^)
CHEM 2274	ORGANIC CHEMISTRY LABORATORY (^)
Sequence 3	
CHEM 1180 & CHEM 1184	GENERAL CHEMISTRY I and GENERAL CHEMISTRY I LABORATORY (** ^)
CHEM 1190 & CHEM 1194	GENERAL CHEMISTRY II and GENERAL CHEMISTRY II LABORATORY (^)
CHEM 2210 & CHEM 2214	FUNDAMENTALS OF ORGANIC CHEMISTRY and FUNDAMENTALS OF ORGANIC CHEMISTRY LABORATORY (^)
CHEM 3650 & CHEM 3654	FUNDAMENTALS OF BIOCHEMISTRY and FUNDAMENTALS OF BIOCHEMISTRY LABORATORY (^)

Required Physics Coursework **5-10****Select one of the following sequences in Physics**

Sequence 1

PHYS 1050 & PHYS 1054	INTRODUCTION TO PHYSICS and INTRODUCTION TO PHYSICS LABORATORY (** ^)
Sequence 2	
PHYS 1110 & PHYS 1154	GENERAL PHYSICS I and GENERAL PHYSICS LABORATORY I (** ^)
PHYS 1120 & PHYS 1164	GENERAL PHYSICS II and GENERAL PHYSICS LABORATORY II (^)
Sequence 3	
PHYS 2110 & PHYS 1154	GENERAL PHYSICS I - CALCULUS LEVEL and GENERAL PHYSICS LABORATORY I (** ^)
PHYS 2120 & PHYS 1164	GENERAL PHYSICS-CALCULUS LEVEL and GENERAL PHYSICS LABORATORY II (^)
Select two of the following courses in Mathematics or Computer Science 6	
MATH 1300	COLLEGE ALGEBRA WITH SUPPORT (**)
MATH 1320	PRE-CALCULUS ALGEBRA (^)
MATH 1330	TRIGONOMETRY (^)
MATH 1340	ALGEBRA AND TRIGONOMETRY FOR CALCULUS (^)
MATH 1930	CALCULUS FOR THE MANAGERIAL, LIFE, AND SOCIAL SCIENCES (^)
MATH 1940	CALCULUS FOR BIOMEDICINE (^)
MATH 1950	CALCULUS I (^)
CSCI 1200	COMPUTER SCIENCE PRINCIPLES (** ^)
CSCI 1620	INTRODUCTION TO COMPUTER SCIENCE II (^)
CIST 1400	INTRODUCTION TO COMPUTER SCIENCE I (^)
Select one of the following courses in Statistics 3	
STAT 3000	STATISTICAL METHODS I (^)
PSYC 3130	STATISTICS FOR THE BEHAVIORAL SCIENCES (^)
SOC 2130	SOCIAL STATISTICS (^)
College Breadth (choose one option) 15-30+	
Option 1: Complete any UNO minor or undergraduate certificate - 15+ hours	
Option 2: Additional General Education Requirements - 19+ Hours	
Additional quantitative literacy - 3 hours	
Additional Social Science Gen. Ed. from 3rd Discipline - 3 hour	
Additional Humanities Gen. Ed. from 3rd Discipline - 3 hours	
HIST 1000 and HIST 1010 - 6 hours	
Additional Nat. and Physical Science w/ Lab - 4-5 hours	
Option 3: CAS comprehensive major (50+ hours) OR any second UNO major (30+ hours)	
Bachelor Science Cognate Requirement 0-15	
See Advisor	
ELECTIVES	
Elective hours as required to reach a total of 120 hours	

Biology, Bachelor of Science Four Year Plan

Freshman

		Credits
Fall		
ENGL 1150	ENGLISH COMPOSITION I (*)	3
MATH 1300	COLLEGE ALGEBRA WITH SUPPORT (or higher**)	4
BIOL 1450	BIOLOGY I (***)	5
Humanities & Fine Arts		3

*ENGL 1150: requires placement via EPPE, ACT, or AP.

**Students may take higher levels of Math, which will require placement. Consult your advisor for the best option.

***BIOL 1450: counts as a Natural & Physical Science Lecture and Lab course as well as a major requirement.

Credits 15

Spring

ENGL 1160	ENGLISH COMPOSITION II (*)	3
CMST 1110	PUBLIC SPEAKING FUNDS	3
	or CMST 2120	or ARGUMENTATION AND DEBATE
BIOL 1750	BIOLOGY II	5
Second Math course (3 credits); Consult your advisor for the best options.**		3

*ENGL 1160: requires ENGL 1150 with grade of C- or higher or placement via EPPE or AP.

**Second Math course (3 credits); Consult your advisor for options.

Credits 14

Sophomore

		Credits
Fall		
Chemistry Supporting Course I (*)		4-5
Approved Statistics Course (**)		3
Humanities/Fine Arts		3
Humanities/Fine Arts (***)		3
Social Science + US Diversity Course		3

*Chemistry Supporting Course options - Sequence I: CHEM 1140 & CHEM 1144. Sequence II and III: CHEM 1180 & CHEM 1184. Either option satisfies the 2nd Natural & Physical Science requirement for the University.

*Please see the catalog for the most up-to-date chemistry prerequisite information.

**Approved Statistics Courses: BIOL 4110, STAT 3000, PSYC 3130, SOC 2130. Requires placement. A minimum of 27 upper-level credits is required in the overall degree, with at least 18 upper-level credits within the major. Depending on options selected throughout degree, upper-level electives may be needed in order to reach this minimum credit requirement.

***HFA must be in a second discipline.

Credits 16-17

Spring

Chemistry Supporting Course I (*)		4-5
BIOL 2140	GENETICS (**)	4
Social Science		3
HIST 1000 or Minor/2nd Major Course (***)		3

*Chemistry Supporting Course options - Sequence I: CHEM 2210 & CHEM 2214. Sequence II and III: CHEM 1190 & CHEM 1194.

**BIOL 2140: requires BIOL 1450 and 1750, as well as CHEM 1140 or 1180.

***A&S College Requirement Options.

Credits 14-15

Junior

Fall

Chemistry Supporting Course III (*)		3-5
BIOL 3020	MOLECULAR BIOLOGY OF THE CELL (**)	3
Social Science Course (***)		3
BIOL 3340	ECOLOGY (#)	4

*Chemistry Supporting Course options - Sequence I and III: CHEM 3650 & CHEM 3654. Sequence II: CHEM 2250.

**BIOL 3020: requires BIOL 2140 and CHEM 1180 or 1190.

***SS course must be in a 2nd discipline.

BIOL 3340: requires BIOL 1450 and 1750; junior-senior standing or graduate student.

Credits 13-15

Spring

Chemistry Supporting Course IV (*) or Elective		3-5
Group II Course with Lab (**)		4
Additional Social Science for A&S or course towards Minor/2nd Major (***)		3
HIST 1010 or Minor/2nd Major Course (#)		3

*Chemistry Supporting Course options - Sequence I: No Course. Sequence II: CHEM 2260 & CHEM 2274. Sequence III: CHEM 3650 & CHEM 3654.

**See Catalog or curriculum guide from Biology advisors for Group II course list.

***A&S College Requirement Options. Additional SS must be in a 3rd discipline.

#A&S College Requirement Options.

Credits 13-15

Senior

Fall

Group I Course (*) w		3
Group II Course with Lab (*) w		4
Physics Course I + Lab (**)		5
Elective if needed to reach 120		3

*See Catalog or curriculum guide from Biology advisor for Group I and Group II course list.

w: Meets Advanced Writing requirement: see curriculum guide from Biology advisor for list of writing-approved courses

**Physics Course options - Sequence I: PHYS 1050 & PHYS 1054. Sequence II: PHYS 1110 & PHYS 1154.

Credits 15

Spring

Group II Course (*)		3
Physics Course II + Lab (**)	or Elective	5
Additional Humanities/Fine Arts for A&S or course towards Minor/2nd Major (***)		3
Elective if needed to reach 120 (#)		3
Elective if needed to reach 120 (#)		3

*See Catalog or curriculum guide from Biology advisors for Group II course list.

**Physics Course options - Sequence I: No course. Sequence II: PHYS 1120 and 1164.

***A&S College Requirement Options. Additional HFA Must be in a 3rd discipline.

#A minimum of 27 upper-level credits is required in the overall degree, with at least 18 upper-level credits within the major. Depending on options selected throughout degree, upper-level electives may be needed in order to reach this minimum credit requirement.

Credits	17
Total Credits	117-123

This roadmap is a suggested plan of study and does not replace meeting with an advisor. Please note that students may need to adjust the actual sequence of courses based on course availability. Please consult an advisor in your major program for further guidance.

This plan is not a contract and curriculum is subject to change.

Additional Information About this Plan:

University Degree Requirements: An undergraduate degree from UNO requires a minimum 120 credit hours, and completion of 30 credit hours per year, on average, is needed to finish in four years. Please review the requirements specific to your program.

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

Please note: **Transfer credit or placement exam scores may change suggested plan of study

GPA Requirements: 2.0