

Bachelor of Science in Natural Science

The BS Natural Sciences Degree is designed for students seeking an interdisciplinary background in the life, physical, and general science. The major consists of a comprehensive core of biological and physical science foundation courses combined with a variety of science and laboratory course electives. Students intending to earn a graduate degree in one of the sciences should pursue a BS degree in the discipline in which they are interested. This program is not designed to prepare students for graduate programs in Biology, Chemistry or Physics.

Requirements (56-78 units)

Total units required for graduation: 120

Lower-Division Requirements (35-41)

Introduction to the Natural Science		
NSCI 2300	Introduction to the Natural Science	1
Statistics (select one course below)		3
MATH 1201	Introduction to Statistical Thinking	
HSCI 2203	Introduction to Statistics in Health Sciences	
MATH 2265	Statistics with Applications	
KINE 3700	Statistics in Kinesiology	
Calculus (Select one course)		3-4
MATH 1601	Modeling with Calculus	
MATH 2210	Calculus I <small>Required to meet prerequisites in the Physics concentration.</small>	
Biology Series I (Select Group A or B) <small>Group B is required to meet prerequisites in the Biology concentration.</small>		4-5
Group A		
BIOL 1000 & 1000L	Introduction to Biology and Introduction to Biology Lab	
Group B		
BIOL 2010	Principles of Biology I	
Biology Series II (Select Group C, D, or E) <small>Group E is required to meet prerequisites in the Biology concentration.</small>		5-8
Group C		
BIOL 2200	Microbiology for Allied Health Majors	
BIOL 2230	Human Anatomy and Physiology I for Allied Health Majors	
Group D		
BIOL 2230	Human Anatomy and Physiology I for Allied Health Majors	
BIOL 2240	Human Anatomy and Physiology II for Allied Health Majors	
Group E		
BIOL 2020	Principles of Biology II	
Chemistry Series (Select Group A or B) <small>Group B is required to meet prerequisites in the Biology and Chemistry concentration.</small>		9-10
Group A		
CHEM 2050 & 2050L	Survey of General Chemistry and Survey of General Chemistry Laboratory	

CHEM 2060 & 2060L	Survey of Organic and Biochemistry and Survey of Organic and Biochemistry Lab	
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Group B		
CHEM 2100 & 2100L	General Chemistry I and General Chemistry I Laboratory	
CHEM 2200 & 2200L	General Chemistry II and General Chemistry II Laboratory	
Physics Series (Select Group A or B) <small>Group B is required to meet prerequisites in the Physics concentration.</small>		10

Group A		
PHYS 2000 & 2000L	Introduction to Physics I and Introduction to Physics I Lab	
PHYS 2010 & 2010L	Introduction to Physics II and Introduction to Physics II Lab	

Group B		
PHYS 2500 & 2500L	General Physics I and General Physics I Lab	
PHYS 2510 & 2510L	General Physics II and General Physics II Lab	

Upper-division requirements (9)		
NSCI 3300	Natural Science Mid-Program Assessment	1
NSCI 4300	Natural Science Capstone	2
Choose one of the following Geology courses (meets GE B5 requirement)		3
GEOL 3020	Natural Disasters	
GEOL 3040	Energy and the Environment	
Minimum of 3 upper-division general science electives from below: <small>Cannot also be used in concentration</small>		3

Any biology labeled BIOL 3100 or higher.

CHEM 3200	Quantitative Analysis	
or CHEM 3400	Principles of Organic Chemistry I	
or CHEM 3500	Principles of Organic Chemistry II	
or CHEM 5100	Polymer Science	
or CHEM 5150	Materials Chemistry	
or CHEM 5200	Instrumental Analysis	
or CHEM 5300	Environmental Chemistry	
or CHEM 5320	Atmospheric Chemistry	
or CHEM 5400	Chemistry of the Elements	
or CHEM 5420	Pyrotechnics	
or CHEM 5500	Medicinal Chemistry	
HSCI 3052	Principles of Environmental Health	
or HSCI 3067	Human Diseases and Disorders	
or HSCI 3067	Human Diseases and Disorders	
or HSCI 4023	Health and Wellness of Older Adults	
KINE 3200	Principles of Human Movement	
or KINE 3250	Exercise Techniques for Resistance Training	
or KINE 3500	Motor Development Across the Lifespan	
or KINE 3600	Physical Activity and Aging	
or KINE 3810	Sport and Exercise Nutrition	
or KINE 4100	Motor Learning and Control	

Students must complete one of the concentrations (12-28)	12-28
Total Units	56-78

Biology Concentration (16-17)

(Program Code: NSBI)

Lower-Division Requirements (4-5)

The following courses are prerequisites to other courses in the Biology concentration and should be taken as part of the core requirements.

BIOL 2010	Principles of Biology I (counts toward core)	
BIOL 2020	Principles of Biology II	
CHEM 2100 & 2100L	General Chemistry I and General Chemistry I Laboratory (counts toward core)	
CHEM 2200 & 2200L	General Chemistry II and General Chemistry II Laboratory	
Organic Chemistry (choose Group A, B, or C)		4-5
Group A		
CHEM 2300 & CHEM 2400L	Organic Chemistry for Life Sciences and Organic Chemistry I Laboratory (5 units total)	
Group B		
CHEM 2400 & 2400L	Organic Chemistry I Lecture and Organic Chemistry I Laboratory (4 units total)	
Group C		
CHEM 3400	Principles of Organic Chemistry I (5 units)	

Upper-Division Requirements (12)

A minimum of 12 upper-division units in biology, excluding courses numbered BIOL 3000-3099

Total Units	16-17
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Chemistry Concentration (20-22)

(Program Code: NSCH)

Lower-Division Requirements (8-10)

The following courses are prerequisites to other courses in the Chemistry concentration and should be taken as part of the core.

CHEM 2100 & 2100L	General Chemistry I and General Chemistry I Laboratory (counts toward core)	
CHEM 2200 & 2200L	General Chemistry II and General Chemistry II Laboratory	
Organic Chemistry (choose from Group A or B)		8-10
Group A		
CHEM 2400 & 2400L	Organic Chemistry I Lecture and Organic Chemistry I Laboratory	
CHEM 2500 & 2500L	Organic Chemistry II and Organic Chemistry II Laboratory	
Group B		
CHEM 3400	Principles of Organic Chemistry I	
CHEM 3500	Principles of Organic Chemistry II	

Upper-Division Requirements (12)	12
A minimum of 12 upper-division units in Chemistry chosen from CHEM 3200, 4100-5500	

Total Units	20-22
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Physics Concentration (28)

(Program Code: NSPH)

Lower-Division Requirements (16)

The following courses are prerequisites to other courses in the Physics concentration and should be taken as part of the core.

MATH 2210	Calculus I	
PHYS 2500 & 2500L	General Physics I and General Physics I Lab	
PHYS 2510 & 2510L	General Physics II and General Physics II Lab	
MATH 2220	Calculus II	4
MATH 2310	Applied Linear Algebra	4
MATH 2320	Multivariable Calculus	4
PHYS 2600L	Introduction to Electronics	1
PHYS 2700	Modern Physics	3

Upper-Division Requirements (12)

PHYS 3100	Mathematical Methods of Physics	4
PHYS 3300	Computational Physics	3
PHYS 3800	Intermediate Physics Laboratory	2
3 units of upper-division coursework in PHYS or ASTR, chosen in consultation with a Physics department adviser.		3

Total Units	28
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Science and Society (12)

(Program Code: NSSS)

General Science	6
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A minimum of 6 units of upper-division general science electives selected from the list below. Courses that were used to meet a core requirement may not be used.

- Any upper-division units in biology labeled BIOL 3100 or higher.
- Any upper-division units in chemistry, chosen from CHEM 3200, CHEM 3400, CHEM 3500 or CHEM 5100-5500.
- Any upper-division Health Science and Human Ecology courses chosen from HSCI 3052, HSCI 3067 or HSCI 4023.
- Any upper-division Kinesiology courses chosen from KINE 3200, KINE 3250, KINE 3500, KINE 3600, KINE 3800, KINE 3810, KINE 4100.

General Education Upper Division Scientific Inquiry	6
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A minimum of 6 Upper-Division Scientific Inquiry Electives (from GE category B-5 that do not duplicate a course taken to meet the Geology requirement)

Total Units	12
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