

**BACHELOR OF SCIENCE IN EDUCATION  
NATURAL SCIENCE EDUCATION**

GENERAL EDUCATION Courses that are **required** are in bold type.

REQUIRED HOURS .....48-49

Communication ..... 8

- ENGL 1113 English Composition I**
- ENGL 1213 English Composition II**
- COMM 1312 Basic Speech**

Mathematics ..... 3

- MATH 1143 Math Concepts
- MATH 1513 College Algebra
- OR a higher numbered math course**

Computer Application/Technology ..... 2

- COMSC 1022 Computers and Information Access
- TECH 1122 Technology & Society

Economics ..... 3

- ECONO 1113 Contemporary Economics**

Health and Physical Education ..... 3

- HPE R 1133 Wellness Concepts and Exercise Applications (includes 1 hour lab)**

Natural Sciences ..... 8

- BIOL 1004 Biological Concepts**
- SCI 1514 Concepts of Physical Science
- SCI 1614 Science & the Environment
- ASTRO 1904 Astronomy**
- GEOL 1934 Physical Geology

Fine Arts and Humanities ..... 6

- ART 1222 Art Survey
- LIT 2412 Introduction to Literature**
- MUSIC 1012 Introduction to Music I
- PHILO 1452 Introduction to Philosophy

U.S. History and Government ..... 6

- HIST 1063 U.S. History**
- POLSC 1103 American Government and Politics**

International and Cultural Studies ..... 6-7

- HIST 1033 World History**
- GEOG 1103 World Cultural Geography**
- POLSC 1153 World Relations and Politics
- Foreign Language (4 hr/ includes 3 hr class & 2 hr lab)

Behavioral/Social Science ..... 3

- PSYCH 1003 General Psychology**
- SOCIO 1003 Introduction to Sociology

Required Courses..... 34

- BIOL 2404 Introductory Botany
- BIOL 2204 Introductory Zoology
- CHEM 1203 General Chemistry I
- CHEM 1252 General Chemistry I Lab
- CHEM 1303 General Chemistry II
- CHEM 1352 General Chemistry II Lab
- PHY 1044 Basic Physics I
- PHY 1054 Basic Physics II
- GEOL 1934 Physical Geology
- BIOL 2714 Human Anatomy and Physiology

Auxiliary Requirements.....5-6

- MATH 1715 College Algebra and Trigonometry
- OR MATH 1513 College Algebra AND MATH 1613 College Trigonometry**

Electives..... 14

**General Concentration**

The general degree in Natural Science is obtained by selecting 14 hours of electives from two or more areas of Biology, Chemistry, Earth Science, or Physics.

**Biology Concentration**

- Required: BIOL 2022 Biological Orientation
- BIOL 3254 Genetics
- BIOL 4604 General Ecology
- OR BIOL 3504 Natural History**

Remaining hours are to be selected from: BIOL 3604 General Entomology, BIOL 4653 Plant Taxonomy, or ALHLT 4355 Microbiology.

**Chemistry Concentration**

An area of specialization in Chemistry can be obtained by completing at least 14 hours of chemistry electives to be selected from: CHEM 2114 Organic/Biochemistry, CHEM 3013/3111 Organic Chemistry I, CHEM 4113/4021 Organic Chemistry II, CHEM 3124 Quantitative Analysis, CHEM 3244 Environmental Chemistry, CHEM 4124 Biochemistry, and CHEM 4254 Industrial Chemistry and Environmental Regulations. Students completing this specialization cannot select both CHEM 2114 and CHEM 3013/3111.

**Physics Concentration**

An area of specialization in Physics can be obtained by selecting 14 hours from the following: PHY 2145 General Physics I, PHY 2155 General Physics II, PHY 3403 Modern Physics for Engineers, and PHY 3311 Modern Physics Laboratory. Students selecting this specialization must take MATH 1834 Calculus I and MATH 2834 Calculus II.

Professional Education Requirements..... 36

**Certificate/Foundations Courses**

- EDUC 2113 Foundations of Education
- SPCED 3132 Exceptional Children
- EDPSY 3433 Adolescent Psychology

**Foreign Language Proficiency (Required)**

**Pre-Professional Semester**

LIBED	3423	Media & Technology
EDPSY	3653	Educational Psychology (Sec)
SECED	4813	Educ Tests & Measurements (Sec)
SECED	4823	Principles of Teaching Secondary
SCI	4843	Teachers' Course in Science

**Professional Semester**

EDUC	3321	Multicultural/Special Populations
EDUC	4021	Critical Issues in Education
EDUC	4041	Classroom Management
SECED	4865	Student Teaching in the Sec School
SECED	4965	Student Teaching in the Sec School

Total hours for degree .....139

**REGULATIONS PERTAINING TO GRADUATION**

Minimum credit hours for graduation.....	139
Minimum credit hours in the liberal arts & sciences .....	55
Minimum credit hours in upper-division (3000/4000 courses).....	40
Minimum credit hours (3000/4000 courses) in major completed at SWOSU.....	8
Minimum credit hours at SWOSU (including last 8).....	30
Minimum Grade Point Average in all coursework.....	2.50

## NATURAL SCIENCE EDUCATION (GENERAL) - (CODE 727)

### Suggested Course Sequence

FIRST YEAR		SECOND YEAR	
FIRST SEMESTER	SECOND SEMESTER	FIRST SEMESTER	SECOND SEMESTER
1001 Freshman Orient*** .....1	2404 Introductory Botany ...4	2204 Introd Zoology ..... 4	2214 Human Anat/Physio . 4
1004 Biological Concepts...4	1213 English Comp II.....3	1203 General Chem I..... 3	1303 General Chem II..... 3
1063 U.S. History .....3	1613 College Trig.....3	1252 General Chem I Lab ... 2	1332 General Chem II Lab.. 2
1133 Wellness Concepts .....3	1312 Basic Speech .....2	1904 Astronomy .....4	1934 Physical Geology ..... 4
1113 Cont Economics.....3	1033 World History.....3	2412 Intro Literature..... 2	1003 Gen Psychology ..... 3
1113 English Comp I.....3	Fine Arts GE course .....2	1514 Con of Physical Sci.... 4	1103 American Govt..... 3
1513 College Algebra.....3	Comp/Tech GE course.....2	English Proficiency Exam**	
Total:.....20	Total:.....19	Total:..... 19	Total: ..... 19

THIRD YEAR		FOURTH YEAR	
FIRST SEMESTER	SECOND SEMESTER	FIRST SEMESTER	SECOND SEMESTER
1044 Basic Physics I.....4	1054 Basic Physics II.....4	3423 Media and Tech ..... 3	3321 Multictrl/Spec Pop ... 1
3433 Adolescent Psych .....3	Science elective*..... 3-4	3653 Educ Psych (Sec)..... 3	4021 Critical Iss in Educ..... 1
Science elective*..... 3-4	Science elective*..... 3-4	4813 Ed Tests & Msrmnts... 3	4041 Classroom Mgmt..... 1
Science elective*..... 3-4	3132 Exceptional Child.....2	4823 Prin of Tchg Sec ..... 3	4865 Student Teaching..... 5
2113 Found of Educ .....3	1103 World Cltrl Geog.....3	4843 +Teachers' Crse in Sci. 3	4965 Student Teaching..... 5
	Fine Arts GE course .....2		
Total:..... 16-18	Total:..... 17-19	Total:..... 15	Total: ..... 13

\* A total of at least 14 hours of science electives must be selected from two or more of the areas of Biology, Chemistry, Earth Science, or Physics. At least 8 hours of these electives must be upper division (3000-4000 courses).

\*\* If applicable. See English Proficiency Program under the General Academic Information Section.

\*\*\*First-time entering freshmen need to take 1001 Freshman Orientation.

+ Offered in Fall of odd years only

## NATURAL SCIENCE EDUCATION (BIOLOGY) - (CODE 727)

### Suggested Course Sequence

FIRST YEAR		SECOND YEAR	
FIRST SEMESTER	SECOND SEMESTER	FIRST SEMESTER	SECOND SEMESTER
1001 Freshman Orient**.....1	1213 English Comp II.....3	1203 Gen Chem I Lect .....3	Biology Elective .....3
1004 Biological Concepts...4	1312 Basic Speech .....2	1252 Gen Chem I Lab.....2	1003 General Psychology ...3
1063 U.S. History .....3	1613 College Trig.....3	1904 Astronomy.....4	1103 American Govt .....3
1113 English Comp I.....3	2022 BioOrientation.....2	2204 Introd Zoology.....4	1303 Gen Chem II Lect.....3
1113 Wellness Concepts .....3	2404 Introd Botany .....4	2412 Intro to Literature.....2	1332 Gen Chem II Lab .....2
1113 Contemp Econ.....3	Comp Appl Elective.....2	3254 Genetics.....4	1934 Physical Geology .....4
1513 College Algebra .....3	Fine Arts Elective.....2	English Proficiency Exam*	
Total:.....20	Total:.....18	Total:..... 19	Total:.....18

THIRD YEAR		FOURTH YEAR	
FIRST SEMESTER	SECOND SEMESTER	FIRST SEMESTER	SECOND SEMESTER
Biology Elective .....4	1054 Basic Physics II.....4	3423 Media and Tech .....3	3321 Multictrl/Spec Pop ....1
1033 World History .....3	1103 World Cult Geog .....3	3653 Educ Psych (Sec).....3	4021 Critical Iss in Educ .....1
1044 Basics Physics I .....4	2113 Found Education .....3	4813 Educ Tests & Msrmnts..3	4041 Classroom Mgmt.....1
2714 Humn Anat & Phys..4	3132 Exceptional Children ...2	4823 Prin of Tchg Secondary 3	4865 Student Teaching.....5
3433 Adolescent Psych .....3	2 Hrs Fine Arts Elective .....2	4843 +Teachers' Course in Sci3	4965 Student Teaching.....5
	3 Hrs Biology Elective.....3	Gen Educ Crse .....2	
Total.....18	Total:.....17	Total:..... 17	Total:.....13

\*If applicable. See English Proficiency Program under the General Academic Information Section.

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+ Offered in Fall of odd years only

**NATURAL SCIENCE EDUCATION (CHEMISTRY) - (CODE 727)**  
**Suggested Course Sequence**

FIRST YEAR		SECOND YEAR	
FIRST SEMESTER	SECOND SEMESTER	FIRST SEMESTER	SECOND SEMESTER
1001 Freshman Orient*** ..... 1	1213 English Comp II .....3	1063 U.S. History .....3	1003 General Psychology ....3
1004 Biological Concepts..... 4	1303 Gen Chemistry II.....3	1904 Astronomy .....4	1934 Physical Geology .....4
1113 English Comp I..... 3	1312 Basic Speech.....2	2204 Introductory Zoology ...4	2412 Intro to Literature.....2
1133 Wellness Concepts ..... 3	1332 Gen Chem II Lab .....2	Chemistry elective* .....4	2714 Human Anat/Phys ....4
1203 General Chem I..... 3	1613 College Trig.....3	Gen Educ Crse.....2	Chemistry elective* .....4
1252 General Chem I Lab.....2	2404 Intro Botany .....4	English Proficiency Exam**	Cmptr/Tech GE crse.....2
1513 College Algebra..... 3	Fine Arts GE course .....2		
Total:..... 19	Total: .....19	Total:.....17	Total: .....19

THIRD YEAR		FOURTH YEAR	
FIRST SEMESTER	SECOND SEMESTER	FIRST SEMESTER	SECOND SEMESTER
1033 World History..... 3	1054 Basic Physics II .....4	3423 Media and Tech .....3	3321 Multictral/Spec Pop ..1
1044 Basic Physics I..... 4	1103 American Govt .....3	3653 Ed Psych (Sec) .....3	4021 Critical Iss in Educ .....1
2113 Foundations of Educ....3	1103 Wrld Cultur Geog.....3	4813 Educ Tests & Msrmnts..3	4041 Classroom Mngt .....1
3132 Exceptional Children...2	1113 Cont Economics.....3	4823 Prin of Tchg Secondary 3	4865 Student Teaching.....5
3433 Adolescent Psychology3	Chemistry elective* .....4	4843 +Teachers' Crse in Sci....3	4965 Student Teaching.....5
Chemistry elective* ..... 4	Fine Arts GE course .....2		
Total:..... 19	Total: .....19	Total:.....15	Total: .....13

\* A total of at least 14 hours of chemistry electives must be selected from: CHEM 2114 Organic/Biochemistry, CHEM 3013/3111 Organic Chemistry I, CHEM 4113/4021 Organic Chemistry II, CHEM 3124 Quantitative Analysis, CHEM 3244 Environmental Chemistry, CHEM 4124 Biochemistry, and CHEM 4254 Industrial Chemistry and Environmental Regulations. Students completing this specialization cannot select both CHEM 2114 and CHEM 3013/3111.

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**NATURAL SCIENCE EDUCATION (PHYSICS) - (CODE 727)**  
**Suggested Course Sequence**

FIRST YEAR		SECOND YEAR	
FIRST SEMESTER	SECOND SEMESTER	FIRST SEMESTER	SECOND SEMESTER
1001 Freshmen Orient** ..... 1	1054 Basic Physics II.....4	1203 General Chem I..... 3	1303 General Chem II.....3
1004 Biological Concepts...4	1213 English Comp .....3	1252 Gen Chem I Lab..... 2	1352 Gen Chem II Lab .....2
1044 Basic Physics I.....4	1834 Calculus I.....4	2204 Intro Zoology ..... 4	2145 General Physics I.....5
1113 English Comp .....3	2404 Intro Botany .....4	2834 Calculus II.....4	Gen Educ Crses .....11
1715 Algebra & Trig.....5	Gen Educ Crses.....4	Gen Educ Crses ..... 6	
Gen Educ Crses.....2		English Proficiency Exam*	
Total:..... 19	Total:.....19	Total:..... 19	Total: .....21

THIRD YEAR		FOURTH YEAR	
FIRST SEMESTER	SECOND SEMESTER	FIRST SEMESTER	SECOND SEMESTER
2113 Found of Educ ..... 3	1934 Physical Geology .....4	3423 Media and Tech ..... 3	3321 Multictrl/Spec Pop..1
2155 General Physics II .....5	3132 Exceptional Child.....2	3653 Educ Psych (Sec)..... 3	4021 Critical Iss in Educ ....1
2714 Human Anat/Phys ....4	3403 Modern Physics .....3	4813 Ed Tests & Msrmnts. 3	4041 Classroom Mgmnt .....1
Gen Educ Crse .....7	3411 Modern Physics Lab ...1	4823 Prin of Tchg Second .3	4865 Student Teaching .....5
	3433 Adolescent Psych .....3	4843 +Teach Crse in Sci..... 3	4965 Student Teaching .....5
	Gen Educ Crses.....6	Gen Educ Crses ..... 4	
Total:..... 19	Total:.....19	Total:..... 19	Total: .....13

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