

# BACHELOR OF SCIENCE

## 112-BIOLOGY (BIOL)

112E-OPTION: ENVIRONMENTAL CONSERVATION

(BIEC) 112G-OPTION: GENERAL BIOLOGY (BIGB)

112M-OPTION: MEDICAL/MOLECULAR (BIMM)

Under the Bachelor of Science in Biology, there are two emphases: the Environmental Conservation emphasis and the Medical/Molecular emphasis. The four-year program seeks to develop a biologist well founded in either area of emphasis. The student integrates mathematical and physical science concepts into biology. The student uses the scientific method as well as evaluates others' use of this method of inquiry. He/she writes and presents scientific papers and reports. The degree is augmented with individual research and internships for successful postgraduate and professional careers.

**REQUIRED HOURS .....121**

**Required General Education Hours .....44**

**UNIV 1152 The University Experience..... 2**

**Communications..... 9**

ENGL 1113 Composition I  
ENGL 1213 Composition II  
SPCH 1113 Speech Communication

**Social and Behavioral Sciences ..... 9**

History ..... 3

*Select from the following:*

HIST 2483 American History to 1877  
HIST 2493 American History since 1877

POLS 1113 American Federal Government 3

Social Science ..... 3

*Select from the following:*

ECON 2113 Principles of Macroeconomics  
ECON 2123 Principles of Microeconomics  
PSY 1113 Introduction to Psychology  
SOC 1113 Introduction to Sociology

**Science and Mathematics .....12**

Physical Science ..... 5

*Select from the following:*

CHEM 1104 Principles of Chemistry  
**\*CHEM 1315 General Chemistry I**  
GEOL 1014 Earth Science  
GEOL 1114 Physical Geology  
GEOL 1124 Physical Geography  
GEOL 1224 Historical Geology  
GEOL 2124 Astronomy  
PHYS 1014 General Physical Science  
PHYS 1114 General Physics I

Biological Science ..... 4

*Select from the following:*

BIOL 1114 General Biology  
BIOL 1134 Introduction to Environmental Science  
**\*BIOL 1144 General Cellular Biology**

Mathematics ..... 3

*Select from the following:*

MATH 1413 Introduction to Statistics  
MATH 1503 Mathematics for Critical Thinking  
**\*MATH 1513 College Algebra (or higher)**  
MATH 1613 Trigonometry  
MATH 1715 Pre-Calculus  
MATH 2264 Analytical Geometry & Calculus I

**Humanities..... 6**

*Select from the following:*

ART (HUM) 1113 Art Appreciation  
COMM (HUM) 2413 Theatre Appreciation  
ENGL 2613 Introduction to Literature  
HUM 2113 Humanities I  
HUM 2223 Humanities II  
HUM 2893 Cinema  
MUSC (HUM) 2573 Music Appreciation  
PHIL 1113 Introduction to Philosophy

**Global Studies ..... 3**

*Select from the following:*

BIOL 3103 Plants and Civilization  
ECON 3003 International Economic Issues and Policies  
GEOG 2243 Human Geography  
GERM 1113 Beginning German I  
HIST 2013 World Civilization I  
HIST 2023 World Civilization II  
HUM 3633 Comparative Religion  
LANG 1113 Foundations of World Languages  
MGMT 3033 Conflict Resolution: I'm Always Right!  
NAMS 1143 Native Americans of North America  
NAMS 2503 Cherokee I  
PHIL 1313 Values and Ethics  
POLS 3053 International Relations  
SOC 3213 Minority Groups  
SPAN 1113 Beginning Spanish I

**Elective ..... 3**

*Select three additional hours from the courses listed above and not previously selected.*

**\*Required**

**Program Core Requirements.....16**

- BIOL 2104 General Botany
- BIOL 2205 General Zoology
- BIOL 3024 Genetics
- BIOL 4602 Biology Research Methods I
- BIOL 4801 Biology Research Methods II

**\*Environmental Conservation Emphasis .....29**

**Required:**

- BIOL 3034 General Ecology
- BIOL 3513 Environmental Conservation

**Select a minimum of 22 credit hours from the following:**

- BIOL 3004 Field Botany
- BIOL 3014 Ecology of Mammals
- BIOL 3033 Fundamentals of GIS
- BIOL 3514 Forest Ecology and Management
- BIOL 3950 Special Topics in Biology
- BIOL 4014 Ornithology
- BIOL 4514 Applied Techniques in Ecology and Conservation
- BIOL 4534 Limnology
- BIOL 4544 Herpetology
- BIOL 4554 Aquatic Biology

**Environmental Conservation**

**Required Support Courses ..... 13-14**

- CHEM 1415 General Chemistry II
- CHEM 3125 Organic Chemistry I
- PHYS 1114 General Physics I or a statistics course (2000 level or higher)

**Environmental Conservation**

**Guided Selected Electives..... 8**

Guided Electives (BIOL, CHEM, GEOL, MATH, PHYS)

**Selected Electives ..... 10-11**

**Medical/Molecular Emphasis .....17**

- BIOL 3204 Physiology
- BIOL 3503 Molecular Cell Biology
- BIOL 3512 Molecular Techniques Laboratory
- BIOL 3525 Biology of Microorganisms
- BIOL 4153 Molecular Genetics

**Medical/Molecular**

**Required Support Courses .....27**

- CHEM 1415 General Chemistry II
- CHEM 3125 Organic Chemistry I
- CHEM 3225 Organic Chemistry II
- CHEM 3404 Biochemistry
- PHYS 1114 General Physics I
- PHYS 1214 General Physics II

**Medical/Molecular**

**Guided Selected Electives..... 8**

BIOL 3000-4000 upper-division biology courses

**\*General Biology Option..... 13-18**

*Select ONE COURSE from each of the following areas:*

**AREA 1: Organismal Biology**

- BIOL 3004 Field Biology
- BIOL 3014 Ecology of Mammals
- BIOL 4014 Ornithology
- BIOL 4524 Applied Techniques in Ecology and Conservation
- BIOL 4544 Herpetology
- BIOL 4554 Aquatic Biology

**AREA 2: Functional Biology**

- BIOL 2285 Human Biology
- BIOL 3204 Physiology
- BIOL 3275 Comparative Vertebrate Anatomy
- BIOL 4214 Histology
- CHEM Biochemistry

**AREA 3: Cell and Molecular Biology**

- BIOL 3503 Molecular Cell Biology
- BIOL 3525 Biology of Microorganisms
- BIOL 4153 Molecular Genetics
- BIOL 4414 Immunology
- BIOL 4503 Molecular Virology

**AREA 4: Ecology**

- BIOL 3513 Environmental Conservation
- BIOL 3514 Forest Ecology and Management
- BIOL 4534 Limnology

**Required Support Courses..... 13-14**

- CHEM 1415 General Chemistry II
- CHEM 3125 Organic Chemistry I
- PHYS 1114 General Physics I or a statistics course (2000 level or higher)

**Guided Selected Electives..... 17-23**

(BIOL, CHEM, GEOL, MATH, PHYS)

**Selected Electives ..... 12**

**Total Credit Hours ..... 121**

Note: BIOL 4602/BIOL 4801 satisfies the computer proficiency requirement for this degree.

*\*Pending Approval by the Oklahoma State Regents for Higher Education*