DEPARTMENT OF BIOLOGY
SCHOOL OF MATHEMATICS, SCIENCE, AND HEALTH SCIENCES

Dr. Jerry Bowen, Department Head

Ms. Claudia Glass
Mr. Don Glass
Dr. Sue Katz-Amburn

Dr. Jae-Ho Kim
Dr. Eric Lee

Dr. Jin Seo
Dr. Craig Zimmermann

MISSION STATEMENT AND PURPOSES
The mission of the Department of Biology at Rogers State University is to support students in their pursuit of knowledge in biology and life science. Our purposes are:

1. To increase the student's critical thinking and reasoning abilities.
2. To increase the student's understanding and appreciation of the biological world, and the ability to apply this understanding in his/her personal and professional life.
3. To increase the student's awareness of the benefits of incorporation of technology into science studies.
4. To increase the student's ability to interpret and understand his/her world.
5. To prepare a student to matriculate into a four-year degree program in math or science-related fields or graduate.
6. To serve as a resource for the community, utilizing the expertise of the faculty.

PROGRAMS OF STUDY

Bachelor of Science
Biology
Option: Environmental Conservation
Option: Medical/Molecular Biology

Minor
Biology

Associate in Science
Biological Science
BACHELOR OF SCIENCE
BIOLOGY
OPTION: ENVIRONMENTAL CONSERVATION (112E)
OPTION: MEDICAL/MOLECULAR (112M)

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

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 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 General Environmental Biology
*BIOLOG 1144 General Cellular Biology

Mathematics .................................................... 3
Select from the following:
MATH 1503 Mathematics for Critical Thinking
*MATH 1513 College Algebra
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
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

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
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</thead>
<tbody>
<tr>
<td>BIOL</td>
<td>2104 General Botany</td>
</tr>
<tr>
<td>BIOL</td>
<td>2205 General Zoology</td>
</tr>
<tr>
<td>BIOL</td>
<td>3024 Genetics</td>
</tr>
<tr>
<td>BIOL</td>
<td>4602 Biology Research Methods I</td>
</tr>
<tr>
<td>BIOL</td>
<td>4801 Biology Research Methods II</td>
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</tbody>
</table>

### Environmental Conservation Emphasis

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
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</thead>
<tbody>
<tr>
<td>BIOL</td>
<td>3004 Field Botany</td>
</tr>
<tr>
<td>BIOL</td>
<td>3014 Ecology of Mammals</td>
</tr>
<tr>
<td>BIOL</td>
<td>3034 General Ecology</td>
</tr>
<tr>
<td>BIOL</td>
<td>3513 Environmental Conservation</td>
</tr>
<tr>
<td>BIOL</td>
<td>4014 Ornithology</td>
</tr>
<tr>
<td>BIOL</td>
<td>4524 Field Zoology</td>
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</tbody>
</table>

### Environmental Conservation Required

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
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<tbody>
<tr>
<td>CHEM</td>
<td>1415 General Chemistry II</td>
</tr>
<tr>
<td>CHEM</td>
<td>3125 Organic Chemistry I</td>
</tr>
<tr>
<td>PHYS</td>
<td>1114 General Physics I</td>
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</tbody>
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### Medical/Molecular Emphasis

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
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<tbody>
<tr>
<td>BIOL</td>
<td>3204 Physiology</td>
</tr>
<tr>
<td>BIOL</td>
<td>3504 Molecular Cell Biology</td>
</tr>
<tr>
<td>BIOL</td>
<td>3525 Biology of Microorganisms</td>
</tr>
<tr>
<td>BIOL</td>
<td>4153 Molecular Genetics</td>
</tr>
</tbody>
</table>

### Medical/Molecular Required

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
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<tbody>
<tr>
<td>CHEM</td>
<td>1415 General Chemistry II</td>
</tr>
<tr>
<td>CHEM</td>
<td>3125 Organic Chemistry I</td>
</tr>
<tr>
<td>CHEM</td>
<td>3225 Organic Chemistry II</td>
</tr>
<tr>
<td>CHEM</td>
<td>3404 Biochemistry</td>
</tr>
<tr>
<td>PHYS</td>
<td>1114 General Physics I</td>
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<tr>
<td>PHYS</td>
<td>1214 General Physics II</td>
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### Medical/Molecular Guided

<table>
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<tr>
<th>Course</th>
<th>Title</th>
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<tbody>
<tr>
<td>BIOL</td>
<td>3000-4000 upper-division biology courses</td>
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<tr>
<th>Course</th>
<th>Title</th>
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<tbody>
<tr>
<td>BIOL</td>
<td>3000-4000 upper-division biology courses</td>
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### Total Credit Hours

121
A minor requires completion of at least 18-24 designated credit hours of coursework outside the student's major field, including a minimum of 9 upper-division credit hours, and may have a required core. The same courses may not be used to fulfill the requirements for both a major and a minor. To complete a minor, a student is required to earn six 3000-4000 level credit hours in that minor at RSU.

**MINOR IN BIOLOGY (003B)**

<table>
<thead>
<tr>
<th>Requirements</th>
<th>.................</th>
<th>12-14</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 1144</td>
<td>General Cellular Biology</td>
<td></td>
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</tbody>
</table>

*and two of the following three courses:*

| BIOL 2104 | General Botany |
| BIOL 2205 | General Zoology |
| BIOL 2124 | Microbiology |

*or*

| BIOL 3525 | Biology of Microorganisms |

<table>
<thead>
<tr>
<th>Electives</th>
<th>.................</th>
<th>9</th>
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<tbody>
<tr>
<td>Nine upper-division hours in Biology</td>
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</table>

Recommendation for Physical Science requirement in General Education:

| CHEM 1315 | Chemistry I |

<table>
<thead>
<tr>
<th>Total Credit Hours</th>
<th>.................</th>
<th>21–23</th>
</tr>
</thead>
</table>

*Not open to students choosing Bachelor of Science in Biology degree.*
ASSOCIATE IN SCIENCE
BIOLOGICAL SCIENCE (003)

The Associate in Science in Biological Science consists of the general education curriculum and the supporting science courses. In support of the mission of the University, the school, and the department, the degree seeks to develop a student with a broad and diverse background in science and general education.

REQUIRED HOURS .......................... 64

Communications ............................... 9
ENGL 1113 Composition I
ENGL 1213 Composition II
SPCH 1113 Speech Communication

Social and Behavioral Sciences .................... 9
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HIST 2483 American History to 1877
HIST 2493 American History since 1877

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BIOL 1134 General Environmental Biology
*BIOI 1144 General Cellular Biology

Mathematics ................................ 3
Select from the following:
MATH 1503 Mathematics for Critical Thinking
*MATH 1513 College Algebra or higher
MATH 1613 Trigonometry
MATH 1715 Pre-Calculus
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POLS 3053 International Relations
SPAN 1113 Beginning Spanish I

Elective ..................................................... 3
Select three additional hours from the courses listed above and not previously selected.

*Required

Program Requirements ......................... 18
BIOL .............................................. Any course 2000 or higher
BIOL 2104 General Botany
BIOL 2205 General Zoology
CHEM 1415 General Chemistry II

Support and Related ................................. 4
Select from the following:
BIOL .............................................. Any course 2000 or higher
CHEM 3125 Organic Chemistry I
CHEM 3225 Organic Chemistry II
MATH 2843 Statistics
PHYS 1114 General Physics I
PHYS 1214 General Physics II

Total Credit Hours ................................. 64