The Marine Biology option prepares students for careers in marine biology and graduate study. Our affiliation with the Marine Science Consortium and its field station at Wallops Island, Virginia gives students hands-on experience and training with marine organisms and environments. Students in this program take several three-week long intensive courses during the summer at the field station.

### Major in Biology, BS

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
</tr>
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<tbody>
<tr>
<td></td>
<td><strong>CORE COURSES</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Foundations of Biology - See Appendix 1</td>
<td>24</td>
</tr>
<tr>
<td>BIOL 211</td>
<td>Concepts of Zoology</td>
<td></td>
</tr>
<tr>
<td>BIOL 221</td>
<td>Concepts of Botany</td>
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</tr>
<tr>
<td>BIOL 343</td>
<td>Principles of Ecology &amp; Evolution</td>
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<tr>
<td>BIOL 362</td>
<td>Cell and Developmental Biology</td>
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<tr>
<td>BIOL 364</td>
<td>Foundations of Genetics &amp; Molecular Biology</td>
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### Option in Marine Biology - See separate block

<table>
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<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
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<tbody>
<tr>
<td></td>
<td><strong>Total Hours</strong></td>
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</table>

### Appendix 1. Foundations of Biology

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
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<tbody>
<tr>
<td>BIOL 101</td>
<td>Foundations of Biology</td>
<td>4</td>
</tr>
</tbody>
</table>

### Concentration in Marine Biology

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>Students majoring in Marine Biology are encouraged to consider completing a minor in Oceanography and, in consultation with their advisor, to take further courses in mathematics.</strong></td>
<td></td>
</tr>
</tbody>
</table>

### REQUIRED MARINE BIOLOGY COURSES

Required Marine Biology (4 credits) - Choose 1 of the following options 1-2:

- **Option 1. Marine Biology**
  - BIOL 291 | Marine Biology

- **Option 2. Coastal Marine Biology and Problem Solving Marine Biol**
  - BIOL 290 | Coastal Marine Biology
  - BIOL 292 | Problem Solving in Marine Biol
  - BIOL 295 | Marine Invertebrates
  - BIOL 375 | Biometry
  - BIOL 396 | Ichthyology

Biological Oceanography - Choose 1 of the following:

- BIOL 495 | Biological Oceanography
- ESCI 465 | Biological Oceanography

Seminar in Marine Biology

- BIOL 472 | Seminar In Biology

### ELECTIVES

undefined - Choose 5 hours from:

- Any 3-level BIOL course(s)
- Any 4-level BIOL course(s)

Note: This requirement may not be satisfied with BIOL 340 or BIOL 390.

In consultation with your advisor, choose additional courses at the 300-level or higher and approved for Biology majors to bring total credits in major to the minimum 47.

### MARINE SCIENCE FIELD COURSES

undefined - Choose 2 classes totaling at least 6 hours from:

- BIOL 293 | Coastal Ornithology
- BIOL 294 | Coral Reef Ecology
- BIOL 295 | Marine Invertebrates
- BIOL 296 | Marine Ecology
- BIOL 392 | Marine Mammals
- BIOL 397 | Marine Botany

Any course(s) with DWLOCATION = W

At least 2 courses (6 credits) of a student’s biology courses (required marine biology or biology electives) must be taken at a marine field site.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>Total Hours</strong></td>
<td>29</td>
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</table>

### Req Related for Biology, BS

For Biology Majors the G2 block of the Liberal Arts Core will be fulfilled by your required related coursework.

### CHEMISTRY AND EARTH SCIENCES

A C- or higher in CHEM 111 and 112 is a pre-requisite for CHEM 235. A C- or higher in CHEM 231 is a pre-requisite for CHEM 232. Students interested in graduate or professional school should take CHEM 231 and 232.

Introduction to Oceanography

- ESCI 261 | Introduction to Oceanography

CHEM 111 | Introductory Chemistry 1

CHEM 112 | Introductory Chemistry 2

Organic Chemistry - Choose 1 of the following options 1-2:

- Option 1. Organic Chemistry I and II
  - CHEM 231 | Organic Chemistry 1
  - CHEM 232 | Organic Chemistry 2

- Option 2. Short Course in Organic Chemistry
  - CHEM 235 | Organic Chemistry

Environmental Chem or Chem Oceanography - Choose 1 of the following:

- CHEM 375 | Environmental Chemistry
- ESCI 363 | Chemical Oceanography

### MATHEMATICS FOR MARINE BIOLOGY

Calculus for Mgt, Calculus I or Honors Calculus - Choose 1 of the following:

- MATH 151 | Calculus for Management
- MATH 161 | Calculus 1
- MATH 163H | Honors Calculus 1

### PHYSICS

undefined - Choose 1 of the following options 1-2:

- Option 1. Physics with Algebra
- PHYS 131 | Physics 1 with Algebra
- PHYS 132 | Physics 2 with Algebra
- Option 2. Physics with Calculus
<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHYS 231</td>
<td>Physics 1 with Calculus</td>
<td></td>
</tr>
<tr>
<td>PHYS 232</td>
<td>Physics 2 with Calculus</td>
<td></td>
</tr>
</tbody>
</table>

**Total Hours**: 31-39