B.S. Marine Biology
College of the Environment and Life Sciences

Department: Biological Sciences
Advisor Contact: Dr. Jacqueline Webb (Coordinator) E-mail: urimbio@etal.uri.edu
Website: http://www.uri.edu/cels/bio/marbio/mbio_main.html
Credits: 120

The Major. The Bachelor of Science degree in Marine Biology encompasses a rigorous curriculum stressing a strong foundation in biological sciences as well as chemistry, math, physics and oceanography as preparation for further study in graduate school, and for a broad range of careers. All majors start their freshman year with a seminar on Topics in Marine Biology (=URI 101). After a year of Introductory Biology (which may be satisfied by AP credit), students choose four core biology courses, and then Marine Biology elective courses can be taken as soon as prerequisites are met. Students may choose from undergraduate courses and some graduate courses offered by URI’s many marine-related programs such as Fisheries, Aquaculture, Marine Affairs and Oceanography.

The Faculty in the marine biology program are actively involved in research on a wide variety of fields, including functional morphology of fishes, behavior of invertebrates, ecology of marine algae and seaweeds, physiological adaptations of invertebrates to extreme marine environments, genomics of marine algae, and developmental and sensory biology of fishes.

Experiential Learning. Students are encouraged to participate in research directed by faculty in Biological Sciences, in other departments in the College of the Environment and Life Sciences, and in the Graduate School of Oceanography (e.g., via the Coastal Fellows Program, the EPSCoR Fellows Program, or the Graduate School of Oceanography’s REU-SURFO Program), or to become involved in off-campus research opportunities. Internships in research, outreach and education may take place at various sites, such as the RI Department of Environmental Management, the Mystic Aquarium and Institute for Exploration, the Roger Williams Zoo, Save the Bay, and the Naval Undersea Warfare Center. URI offers credit for work at the Bermuda Institute of Ocean Science (www.bios.edu, Fall semester program) and the SEA Semester program at Woods Hole (www.sea.edu) through the URI Study Abroad Program, where students can spend a semester taking courses and doing research in the field and/or aboard ship.

Advising and Mentoring. After transferring from UC into CELS (having earned 30 credits and a GPA >2.00), each student is assigned to a faculty advisor from the Marine Biology faculty. The Marine Biology Program Coordinator maintains a marine biology listserv and sends out a weekly e-newsletter to all majors and other interested students with information about courses, jobs, internships, and special lectures or seminars and other activities of interest. In addition, Marine Biology Peer Mentors are enthusiastic and knowledgeable about curriculum and other matters and hold walk-in office hours.

Program Requirements. Majors must complete 36 credits in biological sciences including 2 semesters of Principles of Biology (BIO 101, 102), Topics in Marine Biology (BIO 130), and Marine Biology (BIO 360). Of the remaining 23 credits, one course must be chosen from 4 of the 6 core areas (Cell and Development, BIO 302, 311, 341, 453; Ecology and Evolution, BIO 262, 272; Genetics, BIO 352; Molecular Biology, BIO 437; Organismal Diversity, BIO 304, 321, 323, 354, 366, 412, 365; and Physiology BIO 201, 346). Students choose the balance of 36 credits in the major from among the marine biology elective courses (BIO 345, 355, 365, 412, 418, 441, 455, 457, 469, 475, 563, AVS 440, and OCG 420, 576). A maximum of 3 credits of special problems, independent study or research (491, 492, 493, 494, 495 from one of the following programs: AFS, AVS, BCH, BIO, MIC, NRS, PLS, OCG) may be used to fulfill major credit requirements. A minimum GPA of 2.0 is required in BIO courses used to satisfy the major. Students must also complete 2 semesters of mathematics (MTH 131, 132 or MTH 141, 142) or 1 semester each of calculus and statistics (MTH 131 or 141 and STA 308), 2 semesters of general chemistry with lab (CHM 101, 102, 112, 114), 2 semesters of organic chemistry with lab (CHM 227, 228, 226) or 1 semester each of organic chemistry with lab and biochemistry (CHM 124, 126, BCH 311), 2 semesters of physics with lab (PHY 111, 112, 185, 186), and 1 semester of oceanography (OCG 401 or 451). General Education courses in English Communication, Fine Arts and Literature, Foreign Language and Culture, Letters, and Social Science follow the requirements of the College of the Environment and Life Sciences.
**BACHELOR OF SCIENCE**  
**MARINE BIOLOGY**

<table>
<thead>
<tr>
<th>Core Requirements (13 credits)</th>
<th>Required (13 credits): Principles of Biology I and II (BIO 101, 102); Topics in Marine Biology BIO 130; Marine Biology BIO 360</th>
</tr>
</thead>
</table>
| Additional Core Courses and Marine Biology Electives (23 credits) (including 2 laboratory courses required) | Choose one course from 4 of the following 6 core areas (a minimum of 12 credits):  
  - Cell and Development: BIO 302, 311, 341, 453  
  - Ecology and Evolution: BIO 262, 272  
  - Genetics: BIO 352  
  - Molecular Biology: BIO 437  
  - Organismal Diversity: BIO 304, 321, 323, 354, 365, 366, 412; MIC 211  
  - Physiology: BIO 201, 346 |
| | Choose the balance of 36 credits from:  
  - Marine Environmental Physiology (BIO 345)  
  - Marine Invertebrates of Southern New England (BIO 355)  
  - Evolution and Diversity of Fishes (BIO 412)  
  - Ecology of Marine Plants (BIO 418)  
  - Deep Sea Biology (OCG 420)  
  - Environmental Physiology of Animals (BIO 441)  
  - Marine Ecology (BIO 455)  
  - Marine Ecology Laboratory (BIO 457)  
  - Biology of Algae (BIO 365) (465)  
  - Tropical Marine Invertebrates (BIO 469)*  
  - Coral Reef Ecology (BIO 475)*  
  - Directed Research/Special Problems (AFS, AVS, BCH, BIO, MIC, NRS, and PLS 491, 492; BIO 495*; OCG 493, 494)  
  - Tropical Marine Biology Research (BIO 495)*  
  - Seminar on Marine Mammals (AVS 440)  
  - Ichthyology (BIO 563)  
  - Marine Microbiology (OCG 576)  
* Taught at the Bermuda Institute of Ocean Sciences |
| Mathematics | Calculus I and II (MTH 131, 132 OR MTH 141, 142)  
**OR** One semester of Calculus & one semester of Statistics (MTH 131 or 141 & STA 308) |
| Chemistry | General Chemistry I and II with lab (CHM 101, 102; 112, 114) AND  
Organic Chemistry I and II with lab (CHM 227, 228, 226) OR Introduction to Organic Chemistry with lab and Biochemistry (CHM 124, 126; BCH 311) |
| Physics | General Physics I and II with laboratories (PHY 111,112; 185, 186) |
| Oceanography | General Oceanography (OCG 401) OR Oceanographic Science (OCG 451) |
| General Education Requirements | English Communication, 6 cr, including WRT 104, 105 or 106; Social Sciences, 6 cr; 15 credits in Fine Arts and Literature (3-6 cr); Letters (3-6 cr), and Foreign Language and Culture (3-6 cr); Math and Natural Sciences general education requirements are met by the B.S. Marine Biology program requirements. |
| Remarks | Students must take 2 laboratory courses in Biology in addition to BIO 101, 102, and 360, excluding independent study/research. No more than 3 credits of Research/Special Problems (491, 492, 493, 494, or 495) may be used towards the major. A total of 36 credits in BIO courses is required. 120 credits are required for graduation. Students must maintain a 2.00 grade point average in BIO courses used to meet graduation requirements. |
**B.S. Marine Biology Academic Worksheet**

### Biology Requirements

<table>
<thead>
<tr>
<th>Required BIO Courses (13 credits)</th>
<th>[ ] credits</th>
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<tbody>
<tr>
<td>BIO 101 __________ (4 credits)</td>
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<tr>
<td>BIO 102 __________ (4 credits)</td>
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<tr>
<td>BIO 130 __________ (1 credit)</td>
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<tr>
<td>BIO 360 __________ (4 credits)</td>
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</table>

### Core BIO Courses and Marine Biology Electives (23 credits, minimum)

#### Core BIO Courses (4 courses required)

<table>
<thead>
<tr>
<th>Core Area</th>
<th>Core courses</th>
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<tbody>
<tr>
<td>____________</td>
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In addition to 101, 102, 360 –

Two Lab courses __________ __________

#### Marine Biology Electives* (balance of 23 credits)

| ____________ | ____________(___ credits) |
| ____________ | ____________(___ credits) |
| ____________ | ____________(___ credits) |
| ____________ | ____________(___ credits) |

*Up to 3 credits of independent study/research (491, 492, 493, 494, or 495) in one of the following programs may be used for marine biology electives: AFS, AVS, BCH, BIO, MIC, NRS, PLS or OCG. Additional research credits count as free electives.

### Additional Science Requirements

<table>
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<th>[ ] credits</th>
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#### Oceanography (3 credits)

OGC 401 or OCG 451 __________

#### Chemistry (15 or 16 credits)

| CHM 101, 102 | __________, __________ |
| CHM 112, 114 | __________, __________ |
| CHM 226, 227 and 228 | __________, __________ |

**OR** CHM 124, 126 and BCH 311 __________, __________, __________

#### Mathematics (6, 7 or 8 credits)

| MTH 131 or MTH 141 | __________ |
| MTH 132 or MTH 142 or STA 308 | __________ |

#### Physics (8 credits)

| PHY 111, 185 | __________, __________ |
| PHY 112, 186 | __________, __________ |

### General Education Requirements

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#### WRT 104, 105 or 106 | __________ | ___(___ credits) |

English Communication (1) | __________ | ___(___ credits) |

*Fine Arts/Literature (1 or 2) | __________ | ___(___ credits) |

*Letters (1 or 2) | __________, __________ | ___(___ credits) |

*Language/Culture (1 or 2) | __________, __________ | ___(___ credits) |

Social Science (2) | __________ | ___(___ credits) |

Natural Sciences (2) | (CHM 101), (PHY 111) | Course from “additional science requirements”

Math (1) | __________ | ___(___ credits) |

*A total of 15 credits in these three areas is required.

### Free Electives (see reverse)

<table>
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<th>[ ] credits</th>
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Total – 120 required for graduation | [ ] credits |
Free Electives (please list courses and credits below)

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