B.S.M.A.S IN MARINE SCIENCE AND COMPUTER SCIENCE

Curriculum Requirements

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MSC 111</td>
<td>Introduction to Marine Science</td>
<td>3</td>
</tr>
<tr>
<td>MSC 112</td>
<td>Introduction to Marine Science Lab</td>
<td>1</td>
</tr>
<tr>
<td>MSC 215</td>
<td>Chemical Oceanography</td>
<td>3</td>
</tr>
<tr>
<td>MSC 230</td>
<td>Introduction to Marine Biology</td>
<td>3</td>
</tr>
<tr>
<td>MSC 301</td>
<td>Introduction to Physical Oceanography</td>
<td>3</td>
</tr>
<tr>
<td>MSC 302</td>
<td>Introduction to Physical Oceanography Lab</td>
<td>1</td>
</tr>
<tr>
<td>MSC 321</td>
<td>Scientific Programming in the Atmospheres</td>
<td>3</td>
</tr>
<tr>
<td>MSC 216</td>
<td>Chemical Oceanography Laboratory</td>
<td>1</td>
</tr>
<tr>
<td>or MSC 232</td>
<td>Introduction to Marine Biology Laboratory</td>
<td></td>
</tr>
</tbody>
</table>

Select 9 credit hours of electives in Marine Science

Other Required Courses

Select one of the following:

- BIL 150 & BIL 151 General Biology and General Biology Laboratory
- BIL 160 & BIL 161 Evolution and Biodiversity and Evolution and Biodiversity Laboratory
- CHM 111 Principles of Chemistry I
- CHM 112 Principles of Chemistry II
- CHM 113 Chemistry Laboratory I
- CHM 114 Chemistry Laboratory II
- CSC 120 Computer Programming I
- CSC 220 Computer Programming II
- CSC 314 Computer Organization and Architecture
- CSC 322 System Programming
- CSC 431 Introduction To Software Engineering

Select 6 credit hours of approved electives, as described for Computer Science majors

- ENG 105 English Composition I
- ENG 107 English Composition II: Science and Technology
- or ENG 106 English Composition II

Select one of the following:

- GSC 110 The Earth System
- & GSC 114 and Earth Processes Lab
- GSC 111 Earth System History

MSC 424 Origin and Geology of the Galapagos Islands.
MTH 161 Calculus I
or MTH 171 Calculus I
MTH 162 Calculus II
or MTH 172 Calculus II
MTH 210 Introduction to Linear Algebra
MTH 309 Discrete Mathematics I
MTH 311 Introduction to Ordinary Differential Equations

Select one of the following

- MSC 204 Environmental Statistics
- MTH 224 Introduction to Probability and Statistics

Select one of the following Options:

Option 1:
- PHY 205 University Physics I
- PHY 206 University Physics II
- PHY 207 University Physics III
- PHY 208 University Physics II Lab
- or PHY 209 University Physics III Lab

Option 2:
- PHY 201 University Physics I for the Sciences
- PHY 202 University Physics II for the Sciences
- PHY 106 College Physics Laboratory I
- PHY 108 College Physics Laboratory II

Electives

- Arts and Humanities Cognate Courses
- People and Society Cognate Courses
- 300+ Level Elective
- Additional Elective

Total Credit Hours: 126-128

1 At least 6 of which must be at the 300-level or higher. MSC204 does not satisfy the MSC elective requirement but does satisfy the Statistics requirement.
2 Principles of Chemistry I must be passed with a grade of "C-" or higher.
3 Calculus I and II must be passed with a grade of "C-" or higher.

Sample Plan

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENG 105</td>
<td>English Composition I</td>
<td>3</td>
</tr>
<tr>
<td>ENG 107</td>
<td>English Composition II: Science and Technology</td>
<td>3</td>
</tr>
<tr>
<td>or ENG 106</td>
<td>English Composition II</td>
<td></td>
</tr>
<tr>
<td>MSC 111</td>
<td>Introduction to Marine Science</td>
<td>3</td>
</tr>
<tr>
<td>MSC 112</td>
<td>Introduction to Marine Science Lab</td>
<td>1</td>
</tr>
<tr>
<td>MTH 161</td>
<td>Calculus I</td>
<td>4</td>
</tr>
</tbody>
</table>

Credit Hours: 15

Freshman Year

Fall

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CSC 120</td>
<td>Computer Programming I</td>
<td>4</td>
</tr>
<tr>
<td>ENG 105</td>
<td>English Composition I</td>
<td>3</td>
</tr>
<tr>
<td>MSC 111</td>
<td>Introduction to Marine Science</td>
<td>3</td>
</tr>
<tr>
<td>MSC 112</td>
<td>Introduction to Marine Science Lab</td>
<td>1</td>
</tr>
<tr>
<td>MTH 161</td>
<td>Calculus I</td>
<td>4</td>
</tr>
</tbody>
</table>
## B.S.M.A.S in Marine Science and Computer Science

### Sophomore Year

#### Fall
- **CHM 111** Principles of Chemistry I 3
- **CHM 113** Chemistry Laboratory I 1
- **CSC 314** Computer Organization and Architecture 3
- **MTH 210** Introduction to Linear Algebra 3
- **PHY 205** University Physics I 3
- **Elective #1** 3

**Credit Hours** 16

#### Spring
- **CHM 112** Principles of Chemistry II 3
- **CHM 114** Chemistry Laboratory II 1
- **MSC 301** Introduction to Physical Oceanography 3
- **MSC 302** Introduction to Physical Oceanography Lab 1
- **MTH 311** Introduction to Ordinary Differential Equations 3
- **PHY 206** University Physics II 3
- **Elective #2** 3

**Credit Hours** 17

### Junior Year

#### Fall
- **GSC 111** Earth System History 4
- **MTH 309** Discrete Mathematics I 3
- **PHY 207** University Physics III 3
- **PHY 208** University Physics II Lab 1
- **MSC Course** 3
- **Elective #3** 3

**Credit Hours** 17

#### Spring
- **CSC 322** System Programming 3
- **MSC 204** Environmental Statistics 3
- **MSC 215** Chemical Oceanography 3
- **MSC 216** Chemical Oceanography Laboratory 1
- **MSC 321** Scientific Programming in the Atmospheric Sciences 3
- **Elective #4** 3

**Credit Hours** 16

### Senior Year

#### Fall
- **MSC 230** Introduction to Marine Biology 3

- **CSC Course** 3
- **MSC Course** 3
- **Elective #5** 3
- **Elective #6** 3
- **Credit Hours** 15

**Total Credit Hours** 127

---

* 8 elective courses must include:
  - 3 Arts and Humanities Cognate courses
  - 3 People and Society Cognate courses
  - 1 Course (3 credits) at the 300+ level

1 Students must take one laboratory from MSC 216, MSC 232.