# B.S.M.A.S. IN MARINE SCIENCE / GEOLOGICAL SCIENCES

## Curriculum Requirements

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MSC</td>
<td>Marine Science</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>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></td>
<td>Select two of the following:</td>
<td>2</td>
</tr>
<tr>
<td>MSC 216</td>
<td>Chemical Oceanography Laboratory</td>
<td></td>
</tr>
<tr>
<td>MSC 232</td>
<td>Introduction to Marine Biology Laboratory</td>
<td></td>
</tr>
<tr>
<td>MSC 302</td>
<td>Introduction to Physical Oceanography Lab</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Select 12 credit hours of approved electives in Marine Science</td>
<td>12</td>
</tr>
</tbody>
</table>

### Additional Required Courses

Select one of the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIL</td>
<td>General Biology</td>
<td>5</td>
</tr>
<tr>
<td>BIL 150 &amp; BIL 151</td>
<td>General Biology and General Biology Laboratory</td>
<td></td>
</tr>
<tr>
<td>BIL 160 &amp; BIL 161</td>
<td>Evolution and Biodiversity and Evolution and Biodiversity Laboratory</td>
<td></td>
</tr>
<tr>
<td>CHM</td>
<td>Principles of Chemistry I</td>
<td>3</td>
</tr>
<tr>
<td>CHM 111</td>
<td>Principles of Chemistry II</td>
<td>3</td>
</tr>
<tr>
<td>CHM 113</td>
<td>Chemistry Laboratory I</td>
<td>1</td>
</tr>
<tr>
<td>CHM 114</td>
<td>Chemistry Laboratory II</td>
<td>1</td>
</tr>
<tr>
<td>ENG</td>
<td>English Composition I</td>
<td>3</td>
</tr>
<tr>
<td>ENG 105</td>
<td>English Composition I: Science and Technology</td>
<td>3</td>
</tr>
<tr>
<td>ENG 106</td>
<td>English Composition II</td>
<td></td>
</tr>
<tr>
<td>GSC</td>
<td>The Earth System</td>
<td>3</td>
</tr>
<tr>
<td>GSC 110</td>
<td>Earth System History</td>
<td>4</td>
</tr>
<tr>
<td>GSC 111</td>
<td>Earth Processes Lab</td>
<td>2</td>
</tr>
<tr>
<td>GSC 260</td>
<td>Earth Materials</td>
<td>4</td>
</tr>
<tr>
<td>GSC 360</td>
<td>Depositional and Diagenetic Systems</td>
<td>4</td>
</tr>
<tr>
<td>GSC 380</td>
<td>Paleontology and Stratigraphy</td>
<td>4</td>
</tr>
<tr>
<td>GSC 410</td>
<td>Environmental Geochemistry</td>
<td>3</td>
</tr>
<tr>
<td>GSC 410 or GSC 420</td>
<td>Environmental Geochemistry or Geophysics</td>
<td></td>
</tr>
<tr>
<td>GSC 440</td>
<td>Igneous and Metamorphic Petrology</td>
<td>4</td>
</tr>
<tr>
<td>GSC 480</td>
<td>Structural Geology</td>
<td>4</td>
</tr>
<tr>
<td>GSC 482</td>
<td>Field Methods</td>
<td>2</td>
</tr>
<tr>
<td>GSC 561</td>
<td>Colloquium: Current Topics in the Geosciences</td>
<td>1</td>
</tr>
<tr>
<td>GSC 580</td>
<td>Summer Field Geology</td>
<td>4</td>
</tr>
<tr>
<td>MTH</td>
<td>Calculus I</td>
<td>4</td>
</tr>
<tr>
<td>MTH 161 or MTH 171</td>
<td>Calculus I or Calculus I</td>
<td></td>
</tr>
<tr>
<td>MTH 162</td>
<td>Calculus II</td>
<td>4</td>
</tr>
<tr>
<td>MTH 162 or MTH 172</td>
<td>Calculus II or Calculus II</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Choose one of the following:</td>
<td>3-4</td>
</tr>
<tr>
<td>GSC 204</td>
<td>Environmental Statistics</td>
<td></td>
</tr>
<tr>
<td>MSC 204</td>
<td>Environmental Statistics</td>
<td></td>
</tr>
<tr>
<td>MTH 224</td>
<td>Introduction to Probability and Statistics</td>
<td></td>
</tr>
<tr>
<td>CSC 120</td>
<td>Computer Programming I</td>
<td></td>
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</tbody>
</table>

Select one of the following options:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Option 1:</td>
<td>10</td>
</tr>
</tbody>
</table>
### B.S.M.A.S. in Marine Science / Geological Sciences

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHY 201</td>
<td>University Physics I for the Sciences</td>
</tr>
<tr>
<td>PHY 106</td>
<td>College Physics Laboratory I</td>
</tr>
<tr>
<td>PHY 202</td>
<td>University Physics II for the Sciences</td>
</tr>
<tr>
<td>PHY 108</td>
<td>College Physics Laboratory II</td>
</tr>
</tbody>
</table>

**Option 2:**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHY 205</td>
<td>University Physics I</td>
</tr>
<tr>
<td>PHY 206</td>
<td>University Physics II</td>
</tr>
<tr>
<td>PHY 207</td>
<td>University Physics III</td>
</tr>
<tr>
<td>PHY 208</td>
<td>University Physics II Lab</td>
</tr>
<tr>
<td>or PHY 209</td>
<td>University Physics III Lab</td>
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**Option 3:**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
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</thead>
<tbody>
<tr>
<td>PHY 101</td>
<td>College Physics I</td>
</tr>
<tr>
<td>PHY 102</td>
<td>College Physics II</td>
</tr>
<tr>
<td>PHY 106</td>
<td>College Physics Laboratory I</td>
</tr>
<tr>
<td>PHY 108</td>
<td>College Physics Laboratory II</td>
</tr>
</tbody>
</table>

**Electives**

<table>
<thead>
<tr>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arts and Humanities Cognate Courses</td>
<td>9</td>
</tr>
<tr>
<td>People and Society Cognate Courses</td>
<td>9</td>
</tr>
<tr>
<td>300+ Level Elective</td>
<td>3</td>
</tr>
<tr>
<td>Additional Elective</td>
<td>3</td>
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</tbody>
</table>

**Total Credit Hours:** 130-131

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1. At least 6 of which must be at the 300-level or higher. MSC 204 does not satisfy the MSC elective requirement but does satisfy the Statistics requirement.
2. One course in Geological Sciences may fulfill requirements in both Marine Science and Geology.
3. Principles of Chemistry I must be passed with a grade of "C-" or higher.
4. Calculus I must be passed with a grade of "C-" or higher.
5. Option 1 is recommended for Physics.

## Suggested Plan of Study

### Freshman Year

#### Fall

<table>
<thead>
<tr>
<th>Course</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>GSC 110</td>
<td>The Earth System</td>
<td>3</td>
</tr>
<tr>
<td>GSC 114</td>
<td>Earth Processes Lab</td>
<td>2</td>
</tr>
<tr>
<td>CHM 111</td>
<td>Principles of Chemistry I</td>
<td>3</td>
</tr>
<tr>
<td>CHM 113</td>
<td>Chemistry Laboratory I</td>
<td>1</td>
</tr>
<tr>
<td>ENG 105</td>
<td>English Composition I</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td><strong>Credit Hours</strong></td>
<td><strong>16</strong></td>
</tr>
</tbody>
</table>

#### Spring

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>GSC 111</td>
<td>Earth System History</td>
<td>4</td>
</tr>
<tr>
<td>CHM 112</td>
<td>Principles of Chemistry II</td>
<td>3</td>
</tr>
<tr>
<td>CHM 114</td>
<td>Chemistry Laboratory II</td>
<td>1</td>
</tr>
<tr>
<td>ENG 107</td>
<td>English Composition II: Science and Technology</td>
<td>3</td>
</tr>
<tr>
<td>MTH 161</td>
<td>Calculus I</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td><strong>Credit Hours</strong></td>
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</table>

### Sophomore Year

#### Fall

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>GSC 260</td>
<td>Earth Materials</td>
<td>4</td>
</tr>
<tr>
<td>BIL 150</td>
<td>General Biology</td>
<td>4</td>
</tr>
<tr>
<td>BIL 151</td>
<td>General Biology Laboratory</td>
<td>1</td>
</tr>
<tr>
<td>Course Code</td>
<td>Course Title</td>
<td>Credits</td>
</tr>
<tr>
<td>-----------</td>
<td>--------------------------------------------------</td>
<td>---------</td>
</tr>
<tr>
<td>MTH 162</td>
<td>Calculus II</td>
<td>4</td>
</tr>
<tr>
<td>Elective #1</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Spring</td>
<td>Credit Hours</td>
<td>16</td>
</tr>
<tr>
<td>MSC 215</td>
<td>Chemical Oceanography</td>
<td>3</td>
</tr>
<tr>
<td>MSC 216</td>
<td>Chemical Oceanography Laboratory ¹</td>
<td>1</td>
</tr>
<tr>
<td>GSC 380</td>
<td>Paleontology and Stratigraphy</td>
<td>4</td>
</tr>
<tr>
<td>MSC 204</td>
<td>Environmental Statistics</td>
<td>3</td>
</tr>
<tr>
<td>Elective #2</td>
<td></td>
<td>3</td>
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</table>

**Junior Year**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GSC 360</td>
<td>Depositional and Diagenetic Systems</td>
<td>4</td>
</tr>
<tr>
<td>MSC 230</td>
<td>Introduction to Marine Biology</td>
<td>3</td>
</tr>
<tr>
<td>MSC 232</td>
<td>Introduction to Marine Biology Laboratory ¹</td>
<td>1</td>
</tr>
<tr>
<td>PHY 201</td>
<td>University Physics I for the Sciences</td>
<td>4</td>
</tr>
<tr>
<td>PHY 106</td>
<td>College Physics Laboratory I</td>
<td>1</td>
</tr>
<tr>
<td>Elective #3</td>
<td></td>
<td>3</td>
</tr>
</tbody>
</table>

|Spring     | Credit Hours                                     | 16      |
|GSC 480   | Structural Geology                              | 4       |
|GSC 482   | Field Methods                                   | 2       |
|PHY 202   | University Physics II for the Sciences          | 4       |
|PHY 108   | College Physics Laboratory II                   | 1       |
|MSC Course|                                                  | 3       |
|Elective #4|                                                  | 3       |

**Summer**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GSC 580</td>
<td>Summer Field Geology</td>
<td>4</td>
</tr>
</tbody>
</table>

|Credit Hours| 17      |

**Senior Year**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GSC 410</td>
<td>Environmental Geochemistry</td>
<td>3</td>
</tr>
<tr>
<td>GSC 561</td>
<td>Colloquium - Current Topics in the Geosciences</td>
<td>1</td>
</tr>
<tr>
<td>MSC Course</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>MSC Course</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Elective #5</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Elective #6</td>
<td></td>
<td>3</td>
</tr>
</tbody>
</table>

|Credit Hours| 16      |

|Spring     | Credit Hours                                     | 16      |
|MSC 301   | Introduction to Physical Oceanography            | 3       |
|GSC 440   | Igneous and Metamorphic Petrology                | 4       |
|MSC Course|                                                  | 3       |
|Elective #7|                                                  | 3       |
|Elective #8|                                                  | 3       |

|Credit Hours| 16      |

|Total Credit Hours| 130     |

* 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
Students must take two laboratories from MSC 216, MSC 232, MSC 302.