# Mathematical Biology Minor

**Minor Requirements (22 Hours)**

<table>
<thead>
<tr>
<th>Prerequisites</th>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Required Math Prerequisites: 1</td>
<td>MATH 141</td>
<td>Calculus I</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>MATH 142</td>
<td>Calculus II</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>MATH 241</td>
<td>Vector Calculus</td>
<td>3</td>
</tr>
<tr>
<td>Required Science Prerequisites: 2</td>
<td></td>
<td></td>
<td>8</td>
</tr>
<tr>
<td>Select two of the following:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>BIOL 101</td>
<td>Biological Principles I</td>
<td></td>
</tr>
<tr>
<td></td>
<td>BIOL 101L</td>
<td>Biological Principles I Laboratory</td>
<td></td>
</tr>
<tr>
<td></td>
<td>BIOL 102</td>
<td>Biological Principles II</td>
<td></td>
</tr>
<tr>
<td></td>
<td>BIOL 102L</td>
<td>Biological Principles II Laboratory</td>
<td></td>
</tr>
<tr>
<td></td>
<td>MSCI 101</td>
<td>The Ocean Environment</td>
<td></td>
</tr>
<tr>
<td></td>
<td>MSCI 102</td>
<td>The Living Ocean</td>
<td></td>
</tr>
<tr>
<td>Other Requirements:</td>
<td></td>
<td></td>
<td>3</td>
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<tr>
<td>Select one of the following:</td>
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<tr>
<td></td>
<td>BIOL 301</td>
<td>Ecology and Evolution</td>
<td></td>
</tr>
<tr>
<td></td>
<td>BIOL 303</td>
<td>Fundamental Genetics</td>
<td></td>
</tr>
<tr>
<td></td>
<td>MSCI 314</td>
<td>Physical Oceanography</td>
<td></td>
</tr>
<tr>
<td>Total Credit Hours</td>
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<td>22</td>
</tr>
</tbody>
</table>

1. Fulfills Carolina Core ARP Requirement
2. Fulfills Carolina Core SCI requirement.

Biology majors must take BIOL 101, BIOL 101L, BIOL 102 and BIOL 102L. Marine Science majors must take MSCI 101 and MSCI 102.

## Courses for the Minor (19 Hours)

Minor courses cannot be counted toward student's major

### Linear Algebra (4 Hours)

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Select one of the following:</td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>MATH 344</td>
<td>Applied Linear Algebra</td>
<td></td>
</tr>
<tr>
<td>MATH 344L</td>
<td>Applied Linear Algebra Lab</td>
<td></td>
</tr>
<tr>
<td>or</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MATH 544</td>
<td>Linear Algebra</td>
<td></td>
</tr>
<tr>
<td>MATH 544L</td>
<td>Linear Algebra Lab</td>
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</tr>
<tr>
<td>Total Credit Hours</td>
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</tr>
</tbody>
</table>

### Differential Equations (6 Hours)

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Select two of the following:</td>
<td></td>
<td>6</td>
</tr>
<tr>
<td>MATH 242</td>
<td>Elementary Differential Equations</td>
<td></td>
</tr>
<tr>
<td>MATH 520</td>
<td>Ordinary Differential Equations</td>
<td></td>
</tr>
<tr>
<td>MATH 521</td>
<td>Boundary Value Problems and Partial Differential Equations</td>
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</tr>
<tr>
<td>Total Credit Hours</td>
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<td>6</td>
</tr>
</tbody>
</table>

## Additional Courses (9 Hours)

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 520</td>
<td>Ordinary Differential Equations (if not selected above)</td>
<td></td>
</tr>
<tr>
<td>MATH 521</td>
<td>Boundary Value Problems and Partial Differential Equations (if not selected above)</td>
<td></td>
</tr>
<tr>
<td>BIOL 552</td>
<td>Population Genetics</td>
<td></td>
</tr>
<tr>
<td>or MSCI 552</td>
<td>Population Genetics</td>
<td></td>
</tr>
<tr>
<td>BIOL 652</td>
<td>Evolutionary Biology</td>
<td></td>
</tr>
<tr>
<td>BMEN 212</td>
<td>Fundamentals of Biomedical Systems</td>
<td></td>
</tr>
<tr>
<td>BMEN 240</td>
<td>Cellular and Molecular Biology with Engineering Applications</td>
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</tr>
<tr>
<td>BMEN 263</td>
<td>Introduction to Biomechanics</td>
<td></td>
</tr>
<tr>
<td>BMEN 290</td>
<td>Thermodynamics of Biomolecular Systems</td>
<td></td>
</tr>
<tr>
<td>BMEN 391</td>
<td>Kinetics in Biomolecular Systems</td>
<td></td>
</tr>
<tr>
<td>MATH 523</td>
<td>Mathematical Modeling of Population Biology</td>
<td></td>
</tr>
<tr>
<td>MSCI 582</td>
<td>Marine Hydrodynamics</td>
<td></td>
</tr>
<tr>
<td>Total Credit Hours</td>
<td></td>
<td>9</td>
</tr>
</tbody>
</table>