### Math Applied Track (Chemistry) Requirements

#### Part A: Required Prerequisites

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Math 1151 and 1152</td>
<td>Calculus I and II</td>
<td>10</td>
</tr>
<tr>
<td>Math 1295</td>
<td>Introductory Seminar</td>
<td>1</td>
</tr>
<tr>
<td>Physics 1250 and 1251</td>
<td>Mechanics, Thermal Physics, Waves and E &amp; M, Optics, Modern Physics</td>
<td>10</td>
</tr>
<tr>
<td>Chem 1210 and 1220</td>
<td>General Chemistry I and II</td>
<td>10</td>
</tr>
<tr>
<td>CSE 1222 or 1223</td>
<td>Intro to Computer Programming in C++ or Intro Computer Programming in Java</td>
<td>3</td>
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</tbody>
</table>

Choose one of the following two:

- Biology 1113: Biological Sciences: Energy Transfer and Development | 4
- Biology 1114: Biological Sciences: Form, Function, Diversity and Ecology | 4

#### Part B: Major Program (Minimum grade of C- and GPA of 2.0)

**Core Requirements**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Math 2153 or 2182H</td>
<td>Calculus III or Honors Calculus II</td>
<td>4-5</td>
</tr>
<tr>
<td>Math 2568 or 2568H</td>
<td>Linear Algebra</td>
<td>3</td>
</tr>
<tr>
<td>Math 3345 or 3345H</td>
<td>Foundations of Higher Mathematics</td>
<td>3</td>
</tr>
<tr>
<td>Math 4530 or Stat 4201</td>
<td>Probability or Introduction to Mathematical Statistics I</td>
<td>3-4</td>
</tr>
<tr>
<td>Stat 4202</td>
<td>Introduction to Mathematical Statistics II</td>
<td>4</td>
</tr>
</tbody>
</table>

Prereq: Math 2568

#### Required Courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Math 2255</td>
<td>Differential Equations and Their Applications</td>
<td>3</td>
</tr>
<tr>
<td>Math 4557</td>
<td>Partial Differential Equations</td>
<td>3</td>
</tr>
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</table>

Prereq: Math 2153

Applied Math Courses (choose two of the following three):

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Math 3607 or 3607H</td>
<td>Beginning Scientific Computing</td>
<td>3</td>
</tr>
<tr>
<td>Math 4552</td>
<td>Complex Analysis</td>
<td>3</td>
</tr>
<tr>
<td>Math 4556</td>
<td>Dynamical Systems</td>
<td>3</td>
</tr>
</tbody>
</table>

Prereq: Math 2255 and 2568

#### Applied Math Electives (choose at least 6 hours of science):

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chem 2210</td>
<td>Analytical Chemistry I: Quantitative Analysis</td>
<td>5</td>
</tr>
<tr>
<td>Chem 4300</td>
<td>Physical Chemistry I</td>
<td>3</td>
</tr>
<tr>
<td>Chem 4310</td>
<td>Physical Chemistry II</td>
<td>3</td>
</tr>
</tbody>
</table>

Prereq: Chem 1220 and Math 1148 & 1149

Chem 2210 and Math 2568, Chem 1220, Chem 1114, Math 1152

#### Applied Math Electives (choose at least 6 hours of math):

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Math 3607</td>
<td>Beginning Scientific Computing (IF NOT BEFORE)</td>
<td>3</td>
</tr>
<tr>
<td>Math 4350</td>
<td>Quantitative Neuroscience</td>
<td>3</td>
</tr>
<tr>
<td>Math 4547</td>
<td>Introductory Analysis I</td>
<td>3</td>
</tr>
<tr>
<td>Math 4548</td>
<td>Introductory Analysis II</td>
<td>3</td>
</tr>
<tr>
<td>Math 4551</td>
<td>Vector Analysis</td>
<td>3</td>
</tr>
<tr>
<td>Math 4552</td>
<td>Complex Analysis (IF NOT BEFORE)</td>
<td>3</td>
</tr>
<tr>
<td>Math 4556</td>
<td>Dynamical Systems (IF NOT BEFORE)</td>
<td>3</td>
</tr>
<tr>
<td>Math 4578</td>
<td>Discrete Mathematical Models</td>
<td>3</td>
</tr>
<tr>
<td>Math 5101</td>
<td>Linear Mathematics in Finite Dimensions</td>
<td>3</td>
</tr>
<tr>
<td>Math 5102</td>
<td>Linear Mathematics in Infinite Dimensions</td>
<td>3</td>
</tr>
<tr>
<td>Math 5451</td>
<td>Calculus of Variations and Tensor Calculus</td>
<td>3</td>
</tr>
<tr>
<td>Math 5756</td>
<td>Mathematical Methods in Relativity Theory I</td>
<td>3</td>
</tr>
<tr>
<td>Math 5757</td>
<td>Mathematical Methods in Relativity Theory II</td>
<td>3</td>
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</table>

Prereq: Math 2255 and 2568

Prereq: Math 2568 and Phys 2000

Prereq: Math 2415 and 2568

Total Hours: 41-45

**Honors Degree:** Students completing an honors degree must complete at least 5 honors eligible courses selected in consultation with a faculty advisor. At most 2 courses can count from (2182H, 2568H, 3345H, or 3607H), at least 3 courses must be at the 4000-5000 level.

*revised 9/10/2019*
### Math Applied Track (Chemistry) Sample Schedule

<table>
<thead>
<tr>
<th>Year 1</th>
<th>Autumn</th>
<th>Spring</th>
</tr>
</thead>
<tbody>
<tr>
<td>Math 1151</td>
<td>5</td>
<td>Math 1152</td>
</tr>
<tr>
<td>Chem 1210</td>
<td>5</td>
<td>Math 1295</td>
</tr>
<tr>
<td>CSE 1222 or 1223</td>
<td>3</td>
<td>Chem 1220</td>
</tr>
<tr>
<td>ARTSSCI 1100.01</td>
<td>1</td>
<td>English 1110</td>
</tr>
<tr>
<td>GE</td>
<td>3</td>
<td>GE</td>
</tr>
<tr>
<td><strong>Total</strong></td>
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<td><strong>Total</strong></td>
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<table>
<thead>
<tr>
<th>Year 2</th>
<th>Autumn</th>
<th>Spring</th>
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<tbody>
<tr>
<td>Math 2153</td>
<td>4</td>
<td>Math 3345</td>
</tr>
<tr>
<td>Physics 1250</td>
<td>5</td>
<td>Math 2255</td>
</tr>
<tr>
<td>Biology 1113 or 1114</td>
<td>4</td>
<td>Math 2568</td>
</tr>
<tr>
<td>GE</td>
<td>3</td>
<td>Physics 1251</td>
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<td><strong>Total</strong></td>
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<table>
<thead>
<tr>
<th>Year 3</th>
<th>Autumn</th>
<th>Spring</th>
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</thead>
<tbody>
<tr>
<td>Math 4530 or Stat 4201</td>
<td>3-4</td>
<td>Stat 4202</td>
</tr>
<tr>
<td>Chemistry 2210</td>
<td>5</td>
<td>Chemistry 4300</td>
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<tr>
<td>Math 4557</td>
<td>3</td>
<td>GE</td>
</tr>
<tr>
<td>GE</td>
<td>3</td>
<td>GE</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>14-15</strong></td>
<td><strong>Total</strong></td>
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<table>
<thead>
<tr>
<th>Year 4</th>
<th>Autumn</th>
<th>Spring</th>
</tr>
</thead>
<tbody>
<tr>
<td>Applied Math Course or Elective</td>
<td>3-5</td>
<td>Applied Math Course or Elective</td>
</tr>
<tr>
<td>Applied Math Course or Elective</td>
<td>3-5</td>
<td>Applied Math Course or Elective</td>
</tr>
<tr>
<td>GE</td>
<td>3</td>
<td>GE</td>
</tr>
<tr>
<td>GE</td>
<td>3</td>
<td>GE</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>12-16</strong></td>
<td><strong>Total</strong></td>
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Additional hours may be necessary depending on course selection.