### Biochemistry Option

#### Freshman Year

<table>
<thead>
<tr>
<th>Course Description</th>
<th>Fall Credits</th>
<th>Spring Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BCH 194 - Seminar/Workshop</td>
<td>1</td>
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<tr>
<td>Please take one of the following:</td>
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<tr>
<td>CHMY 141 - College Chemistry I</td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>or CHMY 151 - Honors College Chemistry I</td>
<td></td>
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</tr>
<tr>
<td>STAT 216Q - Introduction to Statistics</td>
<td>3</td>
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<tr>
<td>University Core and Electives</td>
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<tr>
<td>Please take one of the following:</td>
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<tr>
<td>CHMY 143 - College Chemistry II</td>
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<tr>
<td>or CHMY 153 - Honors College Chemistry II</td>
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</tr>
<tr>
<td>M 161Q - Survey of Calculus 1</td>
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<td></td>
</tr>
<tr>
<td>or M 171Q - Calculus I</td>
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<td></td>
</tr>
<tr>
<td>PHSX 205 - College Physics I</td>
<td>4</td>
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<tr>
<td>or PHSX 220 - Physics I with Calculus</td>
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<tr>
<td>University Core and Electives</td>
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<td><strong>Year Total:</strong></td>
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#### Sophomore Year

<table>
<thead>
<tr>
<th>Course Description</th>
<th>Fall Credits</th>
<th>Spring Credits</th>
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</thead>
<tbody>
<tr>
<td>Please take one of the following:</td>
<td>4</td>
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</tr>
<tr>
<td>CHMY 321 - Organic Chemistry I</td>
<td></td>
<td></td>
</tr>
<tr>
<td>or CHMY 331 - Honors Organic Chemistry I</td>
<td></td>
<td></td>
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<tr>
<td>Please take one of the following:</td>
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<tr>
<td>PHSX 207 - College Physics II</td>
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<tr>
<td>or PHSX 222 - Physics II with Calculus</td>
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<tr>
<td>University Core and Electives</td>
<td>6</td>
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<tr>
<td>BCH 294 - Seminar/Workshop</td>
<td>1</td>
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<tr>
<td>BIOB 260 - Cellular and Molecular Biology</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>CHMY 311 - Fundamental Analytical Chem 6</td>
<td>4</td>
<td></td>
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<tr>
<td>Please take one of the following:</td>
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</tr>
<tr>
<td>CHMY 323 - Organic Chemistry II</td>
<td>4</td>
<td></td>
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<tr>
<td>or CHMY 333 - Honors Organic Chemistry II</td>
<td></td>
<td></td>
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<tr>
<td>University Core and Electives</td>
<td>3</td>
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<tr>
<td><strong>Year Total:</strong></td>
<td><strong>14</strong></td>
<td><strong>16</strong></td>
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#### Junior Year

<table>
<thead>
<tr>
<th>Course Description</th>
<th>Fall Credits</th>
<th>Spring Credits</th>
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<tbody>
<tr>
<td>Please take one of the following sequences: 2</td>
<td>5-7</td>
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<tr>
<td>CHMY 361 - Elements of Physical Chemistry</td>
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<tr>
<td>&amp; CHMY 362 - Elements of Physical Chemistry Lab</td>
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<tr>
<td>OR CHMY 371 - Physical Chemistry-Quantum</td>
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<tr>
<td>Chemistry and Spectroscopy I</td>
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<tr>
<td>&amp; CHMY 372 - Physical Chemistry Laboratory 1</td>
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<tr>
<td>&amp; CHMY 373 - Physical Chemistry - Kinetics and Thermodynamics</td>
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<tr>
<td>BCH 394 - Seminar/Workshop</td>
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<tr>
<td>BCH 441 - Biochemistry of Macromolecules</td>
<td>3</td>
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<tr>
<td>BCH 490R - Undergraduate Research 3</td>
<td>3</td>
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<tr>
<td>Physical and Biological Science Electives 4</td>
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<tr>
<td>CHMY 490R - Undergraduate Research 3</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>BCH 442 - Metabolic Regulation</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>BCH 444R - Biochemistry &amp; Molecular Biology Methods</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Physical and Biological Science Electives 4</td>
<td>3</td>
<td></td>
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<tr>
<td>University Core and Electives</td>
<td>3</td>
<td></td>
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<tr>
<td><strong>Year Total:</strong></td>
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#### Senior Year

<table>
<thead>
<tr>
<th>Course Description</th>
<th>Fall Credits</th>
<th>Spring Credits</th>
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<tbody>
<tr>
<td>Physical and Biological Science Electives 4</td>
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<tr>
<td>University Core and Electives</td>
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<tr>
<td>BCH 494 - Seminar/Workshop</td>
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<tr>
<td>BCH 499 - Senior Thesis/Capstone 5</td>
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<tr>
<td>Physical and Biological Science Electives 4</td>
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<td></td>
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<tr>
<td>University Core and Electives</td>
<td>7 or 8</td>
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<tr>
<td><strong>Year Total:</strong></td>
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<td><strong>14-15</strong></td>
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<tr>
<td><strong>Total Program Credits:</strong></td>
<td><strong>120</strong></td>
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1. If you want to take a full year of Physical Chemistry (CHMY 371, CHMY 372 and CHMY 373) then you will need to take M 171Q, M 172Q, and M 273Q (see footnote 2).
2. Students should consider taking the full year of Physical Chemistry sequence (CHMY 371 and CHMY 372 in the fall and CHMY 373 in the spring) instead of the one-semester overview, particularly if planning to go to graduate school. As noted in footnote 1, this sequence requires more calculus as prerequisite coursework.
3. Six (6) credits of Undergraduate Research BCH 490R are tabulated. Students are encouraged to fulfill additional credits of research.
4. A minimum of 18 credits of physical and biological science electives are required.
5. BCH 499 (Senior Year) is required for majors who are writing a thesis for Departmental Honors consideration.
6. CHMY 311 should be taken either in the spring of the sophomore year or the fall of the junior year.

All students are encouraged to take a 200 level English writing course. Please note that this course would be in addition to the core requirement.

A minimum of 120 credits is required for graduation; 42 of these credits must be in courses numbered 300 and above.

### Acceptable Physical and Biological Sciences Electives Include

- **BIOB 375** General Genetics 3
- **BIOB 410** Immunology 3
- **BIOB 412** Hybridomas 2
- **BIOB 413** Flow Cytometry 1
- **BIOB 414** Advanced Microscopy 1
- **BIOB 415** Adv Immunology Methods 1
- **BIOB 420** Evolution 3
- **BIOB 425** Adv Cell & Molecular Biology 3
- **BIOB 428** Molecular Evolution 3
- **BIOB 430** Plant Biotechnology 3
- **BIOB 438** Developmental Mechanisms 3
- **BIOB 476R** Gene Construction 4
- **BIOB 477** Genome Science and Gene Expression 5
- **BIOB 484** Population Genetics 3
- **BIOH 313** Neurophysiology 3
- **BIOH 320** Biomedical Genetics 3
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>BIOH 323</td>
<td>Human Developmental Biology</td>
<td>4</td>
</tr>
<tr>
<td>BIOH 395</td>
<td>Human Pathophysiology</td>
<td>3</td>
</tr>
<tr>
<td>BIOH 405</td>
<td>Hematology</td>
<td>3</td>
</tr>
<tr>
<td>BIOH 406</td>
<td>Hematology Laboratory</td>
<td>1</td>
</tr>
<tr>
<td>BIOH 411</td>
<td>Advanced Human Anatomy</td>
<td>4</td>
</tr>
<tr>
<td>BIOH 422</td>
<td>Genes and Cancer</td>
<td>3</td>
</tr>
<tr>
<td>BIOH 425</td>
<td>Sensory Neurophysiology</td>
<td>3</td>
</tr>
<tr>
<td>BIOH 445</td>
<td>Intro Pharmacology</td>
<td>3</td>
</tr>
<tr>
<td>BIOH 455</td>
<td>Molecular Medicine</td>
<td>3</td>
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<tr>
<td>BIOM 360</td>
<td>General Microbiology</td>
<td>5</td>
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<tr>
<td>BIOM 400</td>
<td>Medical Microbiology</td>
<td>3</td>
</tr>
<tr>
<td>BIOM 405</td>
<td>Host-Associated Microbiomes</td>
<td>4</td>
</tr>
<tr>
<td>BIOM 410</td>
<td>Microbial Genetics</td>
<td>3</td>
</tr>
<tr>
<td>BIOM 415</td>
<td>Microbial Diversity, Ecology, and Evolution</td>
<td>3</td>
</tr>
<tr>
<td>BIOM 421</td>
<td>Concepts of Plant Pathology</td>
<td>3</td>
</tr>
<tr>
<td>BIOM 425</td>
<td>Toxicology: Science of Poisons</td>
<td>3</td>
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<tr>
<td>BIOM 430</td>
<td>Applied and Environmental Microbiology</td>
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<td>BIOM 431</td>
<td>Medical Bacteriology</td>
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<tr>
<td>BIOM 432</td>
<td>Med Bacteriology Lab</td>
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<tr>
<td>BIOM 435</td>
<td>Virology</td>
<td>3</td>
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<tr>
<td>BIOM 441</td>
<td>Eukaryotic Pathogens</td>
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<td>BIOM 450</td>
<td>Microbial Physiology</td>
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<tr>
<td>BIOM 452</td>
<td>Soil &amp; Envirnmental Microbiology</td>
<td>3</td>
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<tr>
<td>BIOO 310</td>
<td>Comparative Vertebrate Anatomy</td>
<td>4</td>
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<tr>
<td>BIOO 412</td>
<td>Animal Physiology</td>
<td>3</td>
</tr>
<tr>
<td>BIOO 433</td>
<td>Plant Physiology</td>
<td>3</td>
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<tr>
<td>BIOO 437</td>
<td>Plant Development</td>
<td>3</td>
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<td>BIOO 458</td>
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<td>3</td>
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<tr>
<td>BIOO 460</td>
<td>Plant Metabolism</td>
<td>3</td>
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<tr>
<td>CHMY 401</td>
<td>Advanced Inorganic Chemistry</td>
<td>3</td>
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<tr>
<td>CHMY 421</td>
<td>Advanced Instrument Analysis</td>
<td>3</td>
</tr>
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<td>EIBO 438</td>
<td>Bioprocess Engin</td>
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<tr>
<td>M 430</td>
<td>Mathematical Biology</td>
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<tr>
<td>NUTR 421</td>
<td>Macronutrient Metabolism</td>
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<tr>
<td>NUTR 422</td>
<td>Micronutrient Metabolism</td>
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</tbody>
</table>
Font Notice

This document should contain certain fonts with restrictive licenses. For this draft, substitutions were made using less legally restrictive fonts. Specifically:

Times was used instead of Adobe Garamond Pro.

The editor may contact Leepfrog for a draft with the correct fonts in place.