Cell and Molecular Biology Concentration Requirements: 40 hours total

- Students must receive a C- or better to meet major requirements.
- Cascading Prerequisites are strictly enforced.
- Students must maintain a 2.0 GPA in all major coursework, which is calculated using only USF Biology courses.
- Students must have less than 3 D and/or F grades in CMB concentration and supporting science requirement lectures.
- Students must complete a minimum of 20 hours in Biology at USF.

**Biology Core Curriculum: 16 hours**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
<th>Prerequisite</th>
</tr>
</thead>
<tbody>
<tr>
<td>BSC 2010, 2010L</td>
<td>Biology I Cellular Processes</td>
<td>4hrs</td>
<td>CHM 2045 (Co-Req, can take concurrently)</td>
</tr>
<tr>
<td>BSC 2011, 2011L</td>
<td>Biology II Diversity</td>
<td>4hrs</td>
<td>BSC 2010/L, CHM 2045</td>
</tr>
<tr>
<td>PCB 3063, 3063L</td>
<td>Genetics w/Lab</td>
<td>4hrs</td>
<td>BSC 2010/L, CHM 2046</td>
</tr>
<tr>
<td>PCB 3043, 3043L</td>
<td>Principles of Ecology w/Lab</td>
<td>4hrs</td>
<td>BSC 2011/L, CHM 2046</td>
</tr>
</tbody>
</table>

**Cell and Molecular Biology Concentration Curriculum: 24 hours**

Most advanced CMB courses are not offered every semester. There are no set offerings for summer semesters.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
<th>Prerequisite</th>
</tr>
</thead>
<tbody>
<tr>
<td>MCB 3410</td>
<td>Cell Metabolism</td>
<td>3hrs</td>
<td>BSC 2010/L, CHM 2046</td>
</tr>
<tr>
<td>PCB 3023, 3023L</td>
<td>Cell Biology w/Lab</td>
<td>4hrs</td>
<td>BSC 2010/L, CHM 2046</td>
</tr>
<tr>
<td>PCB 4024</td>
<td>Molecular Biology of Cell</td>
<td>3hrs</td>
<td>PCB 3023, PCB 3063, CHM 2046</td>
</tr>
<tr>
<td>PCB 4026</td>
<td>Molecular Biology of Gene</td>
<td>3hrs</td>
<td>PCB 3023, PCB 3063, CHM 2046</td>
</tr>
</tbody>
</table>

- Choose 11 hours of Cell and Molecular major electives from the following courses:
  - BCH 3023 | Biochemistry                         | 3hrs  | CHM 2211                        |
  - BCH 3023L | Biochemistry Laboratory             | 2hrs  | BCH 3023(Co-Req, can take concurrently) |
  - BOT 4434C | Mycology                            | 3hrs  | MCB 3020C                      |
  - BSC 4458 | Bioinformatics                       | 3hrs  | PCB 3023 or PCB 3063 and CHM 2045 |
  - BSC 4905 | Independent Study                   | 1-4 hrs | 3.0 GPA, contract with faculty member |
  - BSC 4910 | Undergraduate Research              | 1-4 hrs | CI                             |
  - BSC 4933 | Selected Topics                     | 3hrs  | PCB 3023, PCB 3063, and either PCB 3023L or PCB 3063L |
  - MCB 3020C | General Microbiology           | 4hrs  | BSC 2010/L, CHM 2210          |
  - PCB 3671 | Molecular Evolution                 | 3hrs  | PCB 3063OR CI                 |
  - PCB 3712 | General Physiology                  | 3hrs  | BSC 2011/L, CHM 2046          |
  - PCB 4234 | Principles of Immunology            | 3hrs  | PCB 3023 or PCB 3063 or MCB 3020C, CHM 2210   |
  - PCB 4522C | Experimental Genetics               | 3hrs  | PCB 3063/L, PCB 3023, CHM 2046 |
  - PCB 4663 | Human Genetics                      | 3hrs  | PCB 3023, PCB 3063, CHM 2046  |
  - PCB 4843 | Principles of Neuroscience           | 3hrs  | PCB 4723/3712, CHM 2210, CHM 2046 |
  - PCB 5616 | Molecular Phylogenetics             | 3hrs  | PCB 3063, CHM 2046            |
  - ZOO 4694 | Developmental Biology               | 4hrs  | PCB 3063, PCB 3023, CHM 2210  |
  - ZOO 4753 | Human Histology and Histopathology  | 4hrs  | PCB 3063, PCB 3023, CHM 2210  |

**Supporting Sciences: 34 hours total**

- Students must receive a C- or better to meet requirements for degree
- General Chemistry I & II: CHM 2045/L & CHM 2046/L (8 hrs)  
  - C (2.0) grade min
- Organic Chemistry I & II: CHM 2210/L & CHM 2211/L (10 hrs)  
  - C (2.0) grade min
- One of the General Physics sequences (8 hrs):
  - PHY 2053/L & 2054/L (non-calculus based, recommended for life science/pre-health majors)  
    - C- or better
  - PHY 2048/L & 2049/L (calculus based – must take MAC 2311 and 2312 math sequence)  
    - C (2.0) grade min
- Calc I: MAC 2241 Life Sciences, MAC 2281 Engineering, or MAC 2311 (4hrs)  
  - C (2.0) grade min
- Calc II or Statistics: MAC 2242, MAC 2282, MAC 2312, or STA 2023 (4hrs)  
  - C (2.0) grade min