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 majors’ 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: 16hours

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Prerequisite</th>
</tr>
</thead>
<tbody>
<tr>
<td>BSC 2010, 2010L</td>
<td>Biology I Cellular Processes</td>
<td>4hrs</td>
</tr>
<tr>
<td>BSC 2011, 2011L</td>
<td>Biology II Diversity</td>
<td>4hrs</td>
</tr>
<tr>
<td>PCB 3063, 3063L</td>
<td>Genetics w/Lab</td>
<td>4hrs</td>
</tr>
<tr>
<td>PCB 3043, 3043L</td>
<td>Principles of Ecology w/Lab</td>
<td>4hrs</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.

- PCB 3023, 3023L | Cell Biology w/Lab                                | 4hrs         |
- PCB 4024 | Molecular Biology of Cell (FA & SP)               | 3hrs         |
- PCB 4026 | Molecular Biology of Gene (FA & SP)               | 3hrs         |

- Choose 11 hours of Cell and Molecular major electives from the following courses:
  - BCH 3053 | Biochemistry                                      | 3hrs         |
  - BCH 3023L | Biochemistry Laboratory                          | 2hrs         |
  - BOT 4434C | Mycology                                          | 3hrs         |
  - BSC 4434 | Bioinformatics (Spring Only)                      | 3hrs         |
  - BSC 4905 | Independent Study                                 | 1hr          |
  - BSC 4910 | Undergraduate Research                            | 1-4 hrs      |
  - BSC 4933 | Selected Topic approved for CAM                   | 1-4 hrs      |
  - BSC 5420 | Genetic Engineering (Spring Only)                 | 3hrs         |
  - PCB 3023, 3023L | Cell Biology w/Lab                               | 4hrs         |
  - PCB 4024 | Molecular Biology of Cell (FA & SP)               | 3hrs         |
  - PCB 4026 | Molecular Biology of Gene (FA & SP)               | 3hrs         |

*Not all BSC 4933 courses count towards this concentration’s elective hours, such as BSC 4933 Parasitology. Check with an Advisor.

Supporting Sciences: 32-34 hours total

- Students must receive a C- or better to meet requirements for degree

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Prerequisite</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHM 2045&amp; CHM 2045L</td>
<td>General Chemistry I and Lab</td>
<td>4 hrs.</td>
</tr>
<tr>
<td>CHM 2046 &amp; CHM 2046L</td>
<td>General Chemistry II and Lab</td>
<td>4 hrs.</td>
</tr>
<tr>
<td>CHM 2210 &amp; CHM 2210L</td>
<td>Organic Chemistry I and Lab</td>
<td>5 hrs.</td>
</tr>
<tr>
<td>CHM 2211&amp; CHM 2211L</td>
<td>Organic Chemistry II and Lab</td>
<td>5 hrs.</td>
</tr>
<tr>
<td>One of the General Physics sequences 8 hrs.:</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
  - PHY 2053/L & 2054/L (non-calculus based, recommended for life science/pre-health majors) | C (2.0) grade min |
  - 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 | 3-4 hrs. | C (2.0) grade min |
- Calc II or Statistics: MAC 2242, MAC 2282, MAC 2312, or STA 2023 | 3-4hrs.   | C (2.0) grade min |
**Additional USF Degree Requirements**

USF BioAdvise - SCA 203  bioadvise@cas.usf.edu  Ph: 813/974-3250  Fax: 813/974-2876  http://biology.usf.edu/bioadvise

**General Education:** 24 hours- Choose either FKL or Liberal Arts depending on when you entered USF

- **English Composition – 6 hours**  
  ENC 1101  
  ENC 1102

  - **FKL categories** – use if you entered USF Fall 2009 or later
    - 2 courses (6 hours) in CASB Social/Behavioral Sciences
    - 1 course (3 hours) in CAFA Fine Arts
    - 1 course (3 hours) in CAGC Human/ Cultural Diversity in a Global Context
    - 2 courses (6 hours) in CAHU Humanities
    - 2 courses (6 hours) from above must also meet HHCP Human Historical Context and Process dimension.

    ENC 1101*  

**Exit/Upper-level Requirements:** Choose either FKL or Liberal Arts depending on when you entered USF

  - **FKL categories** – use if you entered USF Fall 2009 or later
    - 1 course (3 hours) in CPST Capstone
    - 1 course (3 hours) in WRIN Writing Intensive

  *If Human Historical Context and Process dimension was not completed in Gen Ed, can be completed here

**Other University and College Requirements:**

- 120 hours
- 48 hour rule
- Summer rule
- **GPA Requirement** - Students must earn an Overall 2.0 GPA and USF 2.0 GPA
- **USF Residency** - Students must complete 30 hours of the last 60 hours in USF coursework.
- **FLENT** (Foreign Language Entrance Requirement)
- **Gordon Rule** Communication and Computation

The final responsibility for meeting all graduation requirements stated in the catalog rests with the student. See the USF catalog for a complete list of graduation requirements.  [http://www.ugs.usf.edu/catalogs.htm](http://www.ugs.usf.edu/catalogs.htm)