BIOLOGICAL SCIENCES REQUIRED CORE COURSES (40 CREDITS)

**BIOLOGICAL SCIENCES REQUIRED CORE COURSES**

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**ALONG WITH CORE COURSES, CHOOSE FROM COURSE GROUPS ACCORDING TO YOUR SPECIALIZATION & DEGREE REQUIREMENTS**

**Structure / Function Group**

- BIOL 343 Plant Anatomy (5)
- BIOL 353 Integrative Anatomy (6)
- BIOL 354 Developmental Biology (5)*
- BIOL 355 Human Anatomy & Physiology (5)***#
- BIOL 356 Human Anatomy & Physiology (5)***#
- BIOL 422 Immunology (5)*
- BIOL 423 Techniques in Immunology & Virology (5)*
- BIOL 426 Medical Microbiology (3)
- BIOL 426LAB Medical Microbiology Lab (2)
- BIOL 441 Plant Physiology (5)*
- BIOL 454 Histology (3)
- BIOL 455 Integrative Animal Physiology (5)#
- BIOL 457 Fundamentals of Neuroscience (5)*
- BIOL 459 Winter Biology (4)*

**Molecular & Cell Group**

- BIOL 323 Microbiology (5)
- BIOL 354 Developmental Biology (5)*
- BIOL 421 General Virology (5)*
- BIOL 422 Immunology (5)*
- BIOL 423 Techniques in Immunology & Virology (5)*
- BIOL 425 Molecular Biotechnology (5)
- BIOL 428 Nutrigenomics (5)
- BIOL 430 Cell Biology (5)
- BIOL 431 The Cell Biology of Cancer (3)
- BIOL 431LAB The Cell Biology of Cancer Lab (2)
- BIOL 441 Plant Physiology (5)*
- BIOL 457 Fundamentals of Neuroscience (5)*

**Ecology Group**

- BIOL 360 General Ecology (5)
- BIOL 362 Biomes of Pacific Northwest (4)
- BIOL 377 Regional Natural History (2)***
- BIOL 377 Regional Natural History Lab (3)***
- BIOL 420 Environmental Microbiology (5)
- BIOL 459 Winter Biology (4)*
- BIOL 461 Community Ecology (3)
- BIOL 462 Wildlife & Fisheries Ecology (5)
- BIOL 463 Limnology (5)
- BIOL 464 Terrestrial Plant Ecology (5)
- BIOL 466 Conservation Biology (5)
- BIOL 467 Biological Field Techniques (5)

**General Biology Electives & Variable Credit Courses**

- BIOL 413 Advanced Biostatistics (5)*

**Evolution Group**

- BIOL 353 Integrative Anatomy (6)
- BIOL 371 Paleobiology (4)
- BIOL 421 General Virology (5)*
- BIOL 465 Biology of Animal Behavior (4)
- BIOL 470 Mechanisms of Evolution (5)

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*Course is in at least one other group & may be counted only once. **BIOL 355 must be paired with BIOL 356. A student cannot receive credit for both BIOL 355/356 and 305/306. ***BIOL 377 must be paired with BIOL 377 Lab. As of Fall 2014, students can only receive credit toward their major for BIOL 355/356 or BIOL 455. NOTE: See CWU catalog and Major Advisor regarding variable credit courses (incl. BIOL 405, which counts in multiple groups) for info on pre-reqs & repeating for credit.
## B.S. Ecology and Evolutionary Biology Specialization

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Credits</th>
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<tbody>
<tr>
<td>Biology Core Requirements</td>
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<tr>
<td>Additional Required Courses</td>
<td>15</td>
</tr>
<tr>
<td>Department-Approved Electives</td>
<td>15-26</td>
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<tr>
<td><strong>TOTAL CREDITS</strong></td>
<td>100</td>
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</tbody>
</table>

- Required Courses:
  - **40 Credits**
    - BIOL 181, 182, 183; CHEM 181, 182, 183 & Labs; BIOL 213; BIOL 321; BIOL 499S

- Additional Required Courses:
  - **15 Credits**
    - CHEM 361 & Lab AND MATH 170 OR MATH 172 AND PHYS 111 OR PHYS 181 OR PHYS 121

- Department-Approved Electives:
  - **15-26 Credits**
    - Choose from the Ecology, Evolution, Molecular/Cell, Structure/Function, and Biological Diversity Group (or non-biology science courses as approved by your advisor).

- **NOTE:** Courses can be counted only once.

## B.S. Biomedical Science Specialization

<table>
<thead>
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<th>Requirement</th>
<th>Credits</th>
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<tbody>
<tr>
<td>Biology Core Requirements</td>
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<tr>
<td>Physics Sequence</td>
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<td>Additional Required Courses</td>
<td>19-28</td>
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<tr>
<td>Department-Approved Electives</td>
<td>17-26</td>
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<tr>
<td><strong>TOTAL CREDITS</strong></td>
<td>100</td>
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</tbody>
</table>

- Required Courses:
  - **40 Credits**
    - BIOL 181, 182, 183; CHEM 181, 182, 183 & Labs; BIOL 213; BIOL 321; BIOL 499S

- Physics Sequence:
  - **15 Credits**
    - Choose from PHYS 111, 112, 113 series OR PHYS 181, 182, 183 series OR the PHYS 121, 122, 123 series

- Additional Required Courses:
  - **19-28 Credits**
    - CHEM 361 & Lab, CHEM 362

- Department-Approved Electives:
  - **17-26 Credits**
    - Choose from the Ecology, Evolution, Molecular/Cell, Structure/Function, and Biological Diversity Group (or non-biology science courses as approved by your advisor).

- **NOTE:** Courses can be counted only once.

## B.S. General Specialization

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Credits</th>
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<tbody>
<tr>
<td>Biology Core Requirements</td>
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<tr>
<td>Additional Required Courses</td>
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<tr>
<td>Department-Approved Electives</td>
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<tr>
<td><strong>TOTAL CREDITS</strong></td>
<td>100</td>
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</tbody>
</table>

- Required Courses:
  - **40 Credits**
    - BIOL 181, 182, 183; CHEM 181, 182, 183 & Labs; BIOL 213; BIOL 321; BIOL 499S

- Additional Required Courses:
  - **10 Credits**
    - CHEM 361 & Lab

- Department-Approved Electives:
  - **20-30 Credits**
    - Choose from the Ecology, Evolution, Molecular/Cell, Structure/Function, and Biological Diversity Group (or non-biology science courses as approved by your advisor).

- **NOTE:** Courses can be counted only once.

## B.S. Molecular and Cell Biology Specialization

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>Biology Core Requirements</td>
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<tr>
<td>Additional Required Courses</td>
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<tr>
<td>Department-Approved Electives</td>
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<td><strong>TOTAL CREDITS</strong></td>
<td>100</td>
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</tbody>
</table>

- Required Courses:
  - **40 Credits**
    - BIOL 181, 182, 183; CHEM 181, 182, 183 & Labs; BIOL 213; BIOL 321; BIOL 499S

- Additional Required Courses:
  - **21 Credits**
    - BIOL 425, BIOL 430, CHEM 361 & Lab, CHEM 362, CHEM 431

- Department-Approved Electives:
  - **20-27 Credits**
    - Choose from the Ecology, Evolution, Molecular/Cell, Structure/Function, and Biological Diversity Group (or non-biology science courses as approved by your advisor).

- **NOTE:** Courses must come from different groups.

## B.A. Biology Major

<table>
<thead>
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<th>Requirement</th>
<th>Credits</th>
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</thead>
<tbody>
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<td>Biology Core Requirements</td>
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<tr>
<td>Additional Required Courses</td>
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<tr>
<td>Department-Approved Electives</td>
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<tr>
<td><strong>TOTAL CREDITS</strong></td>
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</tr>
</tbody>
</table>

- Required Courses:
  - **40 Credits**
    - BIOL 181, 182, 183; CHEM 181, 182, 183 & Labs; BIOL 213; BIOL 321; BIOL 499S

- Additional Required Courses:
  - **5 Credits**
    - CHEM 361 Organic Chemistry I (3 credits)
    - CHEM 361LAB Organic Chemistry I Laboratory (2 credits)

- Department-Approved Electives:
  - **18-26 Credits**
    - ONE course from EACH of the following groups:
      - Biological Diversity
      - Ecology
      - Evolution
      - Molecular and Cell Structure/Function

- **NOTE:** Courses can be counted only once.