<table>
<thead>
<tr>
<th>Course</th>
<th>Number</th>
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<tbody>
<tr>
<td>First Year Experience (F)</td>
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<td>Communication (C)</td>
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<td>Quantitative Reasoning (R)</td>
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<td>STAT 330</td>
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<td>Science &amp; Technology (S)</td>
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<td>Humanities &amp; Fine Arts (A)</td>
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<td>Social &amp; Behavioral Sciences (B)</td>
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<tr>
<td>Cultural Diversity (D)</td>
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<tr>
<td>Global Perspectives (G)</td>
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<td>GEOL 105</td>
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<td>General Education Requirements</td>
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<tr>
<td>Biodiversity &amp; Systematics:</td>
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<tr>
<td>Ecology:</td>
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<td></td>
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<tr>
<td>College Requirements for a BS or BA Degree</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>COLLEGE REQUIREMENTS FOR A BS OR BA DEGREE</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>The College of Science &amp; Mathematics requires an additional 6 credits in Humanities or Social Sciences for the BS degree and an additional 12 credits for the BA degree and two years proficiency of a modern foreign language.</td>
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<td>BA Degree Requirements:</td>
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<td>2nd Yr Lang Proficiency</td>
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<td>HUM or Soc Sci</td>
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<tr>
<td>HUM or Soc Sci</td>
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<tr>
<td>Students transferring in 24 or more credits do not need to take UNIV 189.</td>
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<tr>
<td>ACT score of &gt; 21 will determine English placement and the awarding of credit. Refer to English placement guidelines for additional information.</td>
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</table>
### Related Required Courses (Not counted as part of major credits)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM 121/L</td>
<td>General Chemistry I/Lab</td>
<td>3/1</td>
</tr>
<tr>
<td>CHEM 122/L</td>
<td>General Chemistry II/Lab</td>
<td>3/1</td>
</tr>
<tr>
<td>CHEM 431/L or GEOL 428</td>
<td>Analytical Chemistry I &amp; Lab or Geochemistry</td>
<td>3/2 or 3</td>
</tr>
<tr>
<td>CHEM 240</td>
<td>Survey of Organic Chemistry</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 260</td>
<td>Elements of Biochemistry</td>
<td>4</td>
</tr>
<tr>
<td>CHEM 341/L</td>
<td>Organic Chemistry I &amp; Lab</td>
<td>3/1</td>
</tr>
<tr>
<td>CHEM 342</td>
<td>Organic Chemistry II</td>
<td>3</td>
</tr>
<tr>
<td>BIOC 460</td>
<td>Found/Biochem/Molecular Biol I</td>
<td>3</td>
</tr>
<tr>
<td>MATH 146</td>
<td>Applied Calculus I</td>
<td>4</td>
</tr>
<tr>
<td>MATH 147</td>
<td>Applied Calculus II</td>
<td>4</td>
</tr>
<tr>
<td>PHYS 211/L</td>
<td>College Physics I &amp; Lab</td>
<td>3/1</td>
</tr>
<tr>
<td>PHYS 212/L</td>
<td>College Physics II &amp; Lab</td>
<td>3/1</td>
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</table>

### Continuation of subdisciplines - Physiology: Choose 1 course

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>BOT 380</td>
<td>Plant Physiology</td>
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<tr>
<td>MICR 480</td>
<td>Bacterial Physiology</td>
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<tr>
<td>ZOO 460</td>
<td>Animal Physiology</td>
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</tr>
<tr>
<td>ZOO 462</td>
<td>Physiological Ecology</td>
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</table>

#### Structural Biology: Choose 1 course

<table>
<thead>
<tr>
<th>Course Code</th>
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<th>Credits</th>
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<tbody>
<tr>
<td>BOT 452</td>
<td>Plant Structure</td>
<td>3</td>
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<tr>
<td>PPTH 453</td>
<td>Microscopy</td>
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<tr>
<td>ZOO 280</td>
<td>Comp Chordate Morph</td>
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<tr>
<td>ZOO 370</td>
<td>Cell Biology</td>
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<tr>
<td>ZOO 482</td>
<td>Developmental Biology</td>
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</table>

### Choose One Group:

#### Group 1:

<table>
<thead>
<tr>
<th>Course Code</th>
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<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>CHEM 240</td>
<td>Survey of Organic Chemistry</td>
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</tr>
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<td>Elements of Biochemistry</td>
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#### Group 2:

<table>
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<th>Course Title</th>
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<tbody>
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<td>CHEM 341/L</td>
<td>Organic Chemistry I &amp; Lab</td>
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<tr>
<td>CHEM 342</td>
<td>Organic Chemistry II</td>
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### Math

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<tr>
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<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 146</td>
<td>Applied Calculus I</td>
<td>4</td>
</tr>
<tr>
<td>MATH 147</td>
<td>Applied Calculus II</td>
<td>4</td>
</tr>
</tbody>
</table>

### Physics

<table>
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<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHYS 211/L</td>
<td>College Physics I &amp; Lab</td>
<td>3/1</td>
</tr>
<tr>
<td>PHYS 212/L</td>
<td>College Physics II &amp; Lab</td>
<td>3/1</td>
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</tbody>
</table>

### Approved substitution for subdiscipline courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 146</td>
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</tr>
<tr>
<td>MATH 147</td>
<td>Applied Calculus II</td>
<td>4</td>
</tr>
<tr>
<td>PHYS 211/L</td>
<td>College Physics I &amp; Lab</td>
<td>3/1</td>
</tr>
<tr>
<td>PHYS 212/L</td>
<td>College Physics II &amp; Lab</td>
<td>3/1</td>
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### UNIVERSITY GRADUATION REQUIREMENTS

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Credits</th>
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<tbody>
<tr>
<td>Residency at NDSU (15 cr. @ NDSU):</td>
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<tr>
<td>Credits at 4-year University:</td>
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<tr>
<td>Courses numbered 300+ (Min. 15 cr @ NDSU):</td>
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<td>Total Credits Required:</td>
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</table>

**NOTES/COMMENTS**

Course work transferring from another institution with a grade of D will count toward number of credits, but not toward specific major requirements.

To complete a degree, the general education requirements of the College of Science & Mathematics and NDSU need to be met along with the major requirements.

Students may not minor in biology or zoology with this major.

Courses taken to fulfill gen ed, college and major requirements may NOT be taken P/F.