BA with a Major in Physics

Program Codes:
20FT0240BA

Degree Requirements
To earn a Bachelor of Arts in Liberal Arts and Sciences degree from UIC, students must complete university, college, and department degree requirements. The Department of Physics degree requirements are outlined below. Students should consult the College of Liberal Arts and Sciences section for additional degree requirements and college academic policies.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Summary of Requirements</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Required Prerequisite and Collateral Courses</td>
<td>24</td>
</tr>
<tr>
<td></td>
<td>Major Requirements</td>
<td>40</td>
</tr>
<tr>
<td></td>
<td>General Education and Electives to reach minimum Total</td>
<td>56</td>
</tr>
<tr>
<td></td>
<td>Hours</td>
<td>120</td>
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</table>

General Education
See General Education and Writing-in-the-Discipline in the College of Liberal Arts and Sciences section for information on meeting these requirements. Students should consult the course lists below and their advisors to determine which courses may be counted toward the General Education and Writing-in-the-Discipline requirements.

Required Prerequisite and Collateral Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Required Courses</td>
<td></td>
</tr>
<tr>
<td>MATH 180</td>
<td>Calculus I  a, b</td>
<td>4</td>
</tr>
<tr>
<td>MATH 181</td>
<td>Calculus II a</td>
<td>4</td>
</tr>
<tr>
<td>MATH 210</td>
<td>Calculus III a</td>
<td>3</td>
</tr>
<tr>
<td>MATH 220</td>
<td>Introduction to Differential Equations</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 122</td>
<td>General Chemistry I Lecture c</td>
<td>4</td>
</tr>
<tr>
<td>CHEM 123</td>
<td>General Chemistry Laboratory I ac</td>
<td>1</td>
</tr>
<tr>
<td>CHEM 124</td>
<td>General Chemistry II Lecture c</td>
<td>4</td>
</tr>
<tr>
<td>CHEM 125</td>
<td>General Chemistry Laboratory II ac</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Total Hours</td>
<td>24</td>
</tr>
</tbody>
</table>

a  This course is approved for the Analyzing the Natural World General Education category.

b  MATH 180 fulfills the LAS Quantitative Reasoning requirement.
c  General Education credit is given for successful completion of both CHEM 122 and CHEM 123 or CHEM 124 and CHEM 125.

d  Concurrent registration in PHYS 481 and PHYS 499 is required.

Major Requirements

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Required Courses</td>
<td></td>
</tr>
<tr>
<td>PHYS 141</td>
<td>General Physics I (Mechanics) a</td>
<td>4</td>
</tr>
<tr>
<td>PHYS 142</td>
<td>General Physics II (Electricity and Magnetism) a</td>
<td>4</td>
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</tbody>
</table>

Recommended Plan of Study

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>First Year</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Fall Semester</td>
<td></td>
</tr>
<tr>
<td>ENGL 160</td>
<td>Academic Writing I: Writing in Academic and Public Contexts a</td>
<td>3</td>
</tr>
<tr>
<td>MATH 180</td>
<td>Calculus I b</td>
<td>4</td>
</tr>
<tr>
<td>PHYS 141</td>
<td>General Physics I (Mechanics) c</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Foreign Language</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Hours</td>
<td>15</td>
</tr>
<tr>
<td></td>
<td>Spring Semester</td>
<td></td>
</tr>
<tr>
<td>ENGL 161</td>
<td>Academic Writing II: Writing for Inquiry and Research a</td>
<td>3</td>
</tr>
<tr>
<td>MATH 181</td>
<td>Calculus II</td>
<td>4</td>
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<tr>
<td>PHYS 142</td>
<td>General Physics II (Electricity and Magnetism) c</td>
<td>4</td>
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<tr>
<td></td>
<td>Foreign Language</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Hours</td>
<td>15</td>
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<td></td>
<td>Second Year</td>
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<td></td>
<td>Fall Semester</td>
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<tr>
<td>MATH 210</td>
<td>Calculus III</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 215</td>
<td>Computational and Mathematical Methods for the Physical Sciences</td>
<td>4</td>
</tr>
<tr>
<td>PHYS 230</td>
<td>Fundamentals of Relativity</td>
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<td></td>
<td>Foreign Language</td>
<td>4</td>
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<td></td>
<td>Hours</td>
<td>14</td>
</tr>
<tr>
<td></td>
<td>Spring Semester</td>
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</tr>
<tr>
<td>MATH 220</td>
<td>Introduction to Differential Equations</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 240</td>
<td>Fundamentals of Modern Quantum Theory</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 241</td>
<td>Experiments in Modern Physics</td>
<td>1</td>
</tr>
<tr>
<td>PHYS 245</td>
<td>Introduction to Vibrations, Waves, and Thermal Physics</td>
<td>4</td>
</tr>
<tr>
<td>Foreign Language</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>------------------</td>
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</tr>
<tr>
<td><strong>Hours</strong></td>
<td>15</td>
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**Third Year**

**Fall Semester**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>PHYS 411</td>
<td>Quantum Mechanics I</td>
<td>4</td>
</tr>
<tr>
<td>PHYS 461</td>
<td>Thermal and Statistical Physics</td>
<td>4</td>
</tr>
<tr>
<td>CHEM 122</td>
<td>General Chemistry I Lecture</td>
<td>4</td>
</tr>
<tr>
<td>CHEM 123</td>
<td>General Chemistry Laboratory I c,f</td>
<td>1</td>
</tr>
<tr>
<td>General Education Requirement course</td>
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</tr>
<tr>
<td><strong>Hours</strong></td>
<td><strong>16</strong></td>
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**Spring Semester**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM 124</td>
<td>General Chemistry II Lecture</td>
<td>4</td>
</tr>
<tr>
<td>CHEM 125</td>
<td>General Chemistry Laboratory II c,f</td>
<td>1</td>
</tr>
<tr>
<td>General Education Requirement course</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Elective d,e</td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>Elective e</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td><strong>Hours</strong></td>
<td><strong>15</strong></td>
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</table>

**Fourth Year**

**Fall Semester**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
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</thead>
<tbody>
<tr>
<td>PHYS 401</td>
<td>Electromagnetism I</td>
<td>4</td>
</tr>
<tr>
<td>PHYS 481</td>
<td>Modern Experimental Physics I or Thermal and Statistical Physics</td>
<td>5</td>
</tr>
<tr>
<td>PHYS 499</td>
<td>&amp; PHYS 499</td>
<td></td>
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<tr>
<td>or PHYS 461</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Elective e</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>General Education Requirement course</td>
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</tr>
<tr>
<td><strong>Hours</strong></td>
<td><strong>15</strong></td>
<td></td>
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</tbody>
</table>

**Spring Semester**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elective d,e</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Elective d,e</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Elective d,e</td>
<td></td>
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</tr>
<tr>
<td>General Education Requirement course</td>
<td>3</td>
<td></td>
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<td>General Education Requirement course</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td><strong>Hours</strong></td>
<td><strong>15</strong></td>
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</tbody>
</table>

**Total Hours** 120

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a *Satisfies University Writing Requirement.*
b *Satisfies the LAS Quantitative Reasoning requirement when a grade of C or better is earned.*
c *Is approved for General Education credit as a laboratory course in Analyzing the Natural World.*
d *Among other elective courses, the student is encouraged to consider PHYS 441, then PHYS 402 or PHYS 412.*
e *Elective hours as needed to reach minimum 120 total hours for graduation.*

**Note:** PHYS 141 and PHYS 142 are offered every semester (including summer session). All other physics courses are offered only in the semester indicated.

**Note:** Students must earn at least 40 advanced hours at a four-year college or university. These hours may include hours in the major.

**Note:** The UIC General Education Requirement is nine courses: Two laboratory courses from Analyzing the Natural World, one course from each of Understanding the Individual and Society, Understanding the Past, Understanding the Creative Arts, Exploring World Cultures, and Understanding U.S. Society. The two remaining GenEd courses can be taken from any category. For example, taking CHEM 122, CHEM 123, CHEM 124, CHEM 125 and PHYS 141, PHYS 142 fulfills four of nine GenEd courses and the Analyzing the Natural World category.