# 2019 - 2020 Major Map

## Physics, BS

**School/College:** The College of Liberal Arts and Sciences  
**Location:** Tempe campus  
**LAPHYBS**

### Term 1 - 14 Credit Hours

Critical course signified by 🔴

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
<th>Minimum Grade</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>LIA 101: Student Success in the College of Liberal Arts and Sciences</td>
<td>1</td>
<td>C</td>
<td></td>
</tr>
<tr>
<td>MAT 270: Calculus with Analytic Geometry I (MA)</td>
<td>4</td>
<td>C</td>
<td></td>
</tr>
<tr>
<td>ENG 101 or ENG 102: First-Year Composition OR</td>
<td>3</td>
<td>C</td>
<td></td>
</tr>
<tr>
<td>ENG 105: Advanced First-Year Composition OR</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ENG 107 or ENG 108: First-Year Composition</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Humanities, Arts and Design (HU) AND Historical Awareness (H)</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Social-Behavioral Sciences (SB)</td>
<td>3</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Maintain 2.50 GPA in Critical Tracking Courses.

Term hours subtotal: **14**

### Term 2 - 14 - 30 Credit Hours

Critical course signified by 🔴

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
<th>Minimum Grade</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAT 271: Calculus with Analytic Geometry II (MA)</td>
<td>4</td>
<td>C</td>
<td></td>
</tr>
<tr>
<td>PHY 150: Physics I (SQ)</td>
<td>4</td>
<td>C</td>
<td></td>
</tr>
<tr>
<td>ENG 101 or ENG 102: First-Year Composition OR</td>
<td>3</td>
<td>C</td>
<td></td>
</tr>
<tr>
<td>ENG 105: Advanced First-Year Composition OR</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ENG 107 or ENG 108: First-Year Composition</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Humanities, Arts and Design (HU) AND Cultural Diversity in the U.S. (C)</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Elective</td>
<td>2</td>
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</tr>
</tbody>
</table>

Complete ENG 101 OR ENG 105 OR ENG 107 course(s).

Maintain 2.50 GPA in Critical Tracking Courses.

Term hours subtotal: **16**

### Term 3 - 30 - 47 Credit Hours

Critical course signified by 🔴

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
<th>Minimum Grade</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAT 272: Calculus with Analytic Geometry III (MA)</td>
<td>4</td>
<td>C</td>
<td></td>
</tr>
<tr>
<td>PHY 151: Physics II (SQ)</td>
<td>4</td>
<td>C</td>
<td></td>
</tr>
<tr>
<td>CLAS Science and Society Elective</td>
<td>3</td>
<td>C</td>
<td></td>
</tr>
<tr>
<td>Social-Behavioral Sciences (SB) AND Global Awareness (G)</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Elective</td>
<td>3</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Complete First-Year Composition requirement.

Maintain 2.50 GPA in Critical Tracking Courses.

Complete Mathematics (MA) requirement.

Term hours subtotal: **17**

### Term 4 - 47 - 63 Credit Hours

Critical course signified by 🔴

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
<th>Minimum Grade</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHY 201: Mathematical Methods in Physics I (CS)</td>
<td>3</td>
<td>C</td>
<td></td>
</tr>
</tbody>
</table>

• PHY 121/122 and 131/132 may be used in place of PHY 150 and 151.
• Join a student club or professional organization.

Meet with your academic advisor to discuss summer internship and/or Research Opportunities for Undergraduates (REU).
**PHY 252: Physics III (SQ)**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
<th>Grade</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Literacy and Critical Inquiry (L)</td>
<td>3</td>
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</table>

**Complete 2 courses:**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
<th>Grade</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elective</td>
<td>6</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Maintain 2.50 GPA in Critical Tracking Courses.**

Term hours subtotal: 16

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### Term 5 63 - 78 Credit Hours

<table>
<thead>
<tr>
<th>Necessary course signified by</th>
<th>Hours</th>
<th>Minimum Grade</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>PHY 302: Mathematical Methods in Physics II</strong></td>
<td>3</td>
<td>C</td>
<td></td>
</tr>
<tr>
<td><strong>PHY 310: Classical Particles, Fields, and Matter I</strong></td>
<td>3</td>
<td>C</td>
<td></td>
</tr>
<tr>
<td><strong>PHY 314: Quantum Physics I</strong></td>
<td>3</td>
<td>C</td>
<td></td>
</tr>
<tr>
<td>Upper Division Humanities, Arts and Design (HU) OR Upper Division Social-Behavioral Sciences (SB)</td>
<td>3</td>
<td>C</td>
<td></td>
</tr>
<tr>
<td>Upper Division Elective</td>
<td>3</td>
<td></td>
<td></td>
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</tbody>
</table>

Term hours subtotal: 15

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### Term 6 78 - 93 Credit Hours

<table>
<thead>
<tr>
<th>Necessary course signified by</th>
<th>Hours</th>
<th>Minimum Grade</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>PHY 311: Classical Particles, Fields, and Matter II</strong></td>
<td>3</td>
<td>C</td>
<td></td>
</tr>
<tr>
<td><strong>PHY 315: Quantum Physics II</strong></td>
<td>3</td>
<td>C</td>
<td></td>
</tr>
<tr>
<td><strong>PHY 334: Advanced Laboratory I (L)</strong></td>
<td>3</td>
<td>C</td>
<td></td>
</tr>
<tr>
<td>Upper Division CLAS Science and Society Elective</td>
<td>3</td>
<td>C</td>
<td></td>
</tr>
<tr>
<td>Upper Division Elective OR PHY 484: Internship</td>
<td>3</td>
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<td></td>
</tr>
</tbody>
</table>
| Complete Cultural Diversity in the U.S. (C) AND Global Awareness (G) AND Historical Awareness (H) course(s). | | | • Explore graduate programs
| | | | • Prepare for the physics GRE |

Term hours subtotal: 15

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### Term 7 93 - 108 Credit Hours

<table>
<thead>
<tr>
<th>Necessary course signified by</th>
<th>Hours</th>
<th>Minimum Grade</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>PHY 441: Statistical and Thermal Physics</strong></td>
<td>3</td>
<td>C</td>
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</tr>
<tr>
<td><strong>PHY 333: Electronic Circuits and Measurements OR PHY 465: Advanced Laboratory II</strong></td>
<td>3</td>
<td>C</td>
<td></td>
</tr>
<tr>
<td><strong>PHY 412: Classical Particles, Fields, and Matter III OR PHY 416: Quantum Physics III</strong></td>
<td>3</td>
<td>C</td>
<td></td>
</tr>
<tr>
<td>Upper Division Elective</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Elective</td>
<td>3</td>
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</table>

Term hours subtotal: 15

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### Term 8 108 - 120 Credit Hours

<table>
<thead>
<tr>
<th>Necessary course signified by</th>
<th>Hours</th>
<th>Minimum Grade</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>PHY Upper Division Elective</strong></td>
<td>3</td>
<td>C</td>
<td></td>
</tr>
<tr>
<td>Complete 3 courses:</td>
<td></td>
<td></td>
<td>• Develop your professional online presence</td>
</tr>
<tr>
<td>Elective</td>
<td>9</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Term hours subtotal: 12
• All students pursuing a B.S. or B.S.P. degree in the College of Liberal Arts and Sciences must complete two courses from the Science and Society list found at https://clas.asu.edu/resources/science-society. At least one of the two courses must be upper division. Students must earn a C or better in the courses, and no more than one of the two can also be used to simultaneously fill a requirement of the major, minor or related area. Science and Society courses cannot also be used to fill the general studies HU, SB, SQ or SG requirements.

Notes:
• Please keep in mind that the applicability of a specific transfer course toward an ASU degree program depends on the requirements of the department, division, college or school in which you are enrolled at ASU. Transfer agreements that guarantee the completion of university level requirements do not necessarily meet college and major requirements. Please consult with an advisor for more information.

General Studies Awareness Requirements:
• Cultural Diversity in the U.S. (C)
• Global Awareness (G)
• Historical Awareness (H)

First-Year Composition

General Studies designations listed on the major map are current for the 2019 - 2020 academic year.