Bachelor of Science in Physics

The bachelor of science program includes appropriate course work in physics to prepare students for employment or graduate work in a variety of physics-related fields. Students are encouraged to speak to their advisor to select elective courses that will best meet their career needs. The BS in Physics requires a total of 75 units listed below; of those 7 units count towards the university’s General Education requirements.

Departmental Honors

To be awarded departmental honors in physics a student must:

1. Achieve at least a 3.5 minimum grade point average in courses required for the major taken at California State University, San Bernardino and at least a 3.0 grade point average overall;
2. Conduct advanced research on a topic approved by a faculty member who will serve as project director;
3. Obtain written approval upon successful completion of the project from the project director and the chair, and present the results of the research to the department or at a research conference, and/or publish the results in a peer-reviewed scientific journal.

Requirements (75 units)

Total units required for graduation: 120

Requirements for the B.S. in Physics

(Program Code: PHYS)

Lower-division requirements (38)

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM 2100</td>
<td>General Chemistry I</td>
<td>4</td>
</tr>
<tr>
<td>CHEM 2100L</td>
<td>General Chemistry I Laboratory</td>
<td>1</td>
</tr>
<tr>
<td>MATH 2210</td>
<td>Calculus I</td>
<td>4</td>
</tr>
<tr>
<td>MATH 2220</td>
<td>Calculus II</td>
<td>4</td>
</tr>
<tr>
<td>MATH 2310</td>
<td>Applied Linear Algebra</td>
<td>4</td>
</tr>
<tr>
<td>MATH 2320</td>
<td>Multivariable Calculus</td>
<td>4</td>
</tr>
<tr>
<td>PHYS 1500</td>
<td>Tools for Physicists</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 2500</td>
<td>General Physics I</td>
<td>4</td>
</tr>
<tr>
<td>PHYS 2500L</td>
<td>General Physics I Lab</td>
<td>1</td>
</tr>
<tr>
<td>PHYS 2510</td>
<td>General Physics II</td>
<td>4</td>
</tr>
<tr>
<td>PHYS 2510L</td>
<td>General Physics II Lab</td>
<td>1</td>
</tr>
<tr>
<td>PHYS 2600L</td>
<td>Introduction to Electronics</td>
<td>1</td>
</tr>
<tr>
<td>PHYS 2700</td>
<td>Modern Physics</td>
<td>3</td>
</tr>
</tbody>
</table>

Upper-division requirements (37)

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHYS 3100</td>
<td>Mathematical Methods of Physics</td>
<td>4</td>
</tr>
<tr>
<td>PHYS 3200</td>
<td>Classical Mechanics</td>
<td>4</td>
</tr>
<tr>
<td>PHYS 3300</td>
<td>Computational Physics</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 3400</td>
<td>Electricity &amp; Magnetism</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 3500</td>
<td>Statistical and Thermal Physics</td>
<td>4</td>
</tr>
<tr>
<td>PHYS 3800</td>
<td>Intermediate Physics Laboratory</td>
<td>2</td>
</tr>
<tr>
<td>PHYS 4400</td>
<td>Electricity &amp; Magnetism II</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 4700</td>
<td>Quantum Mechanics</td>
<td>4</td>
</tr>
<tr>
<td>PHYS 4800</td>
<td>Senior Thesis</td>
<td>2</td>
</tr>
</tbody>
</table>

Can substitute ASTR 4000 for PHYS 4800; both count towards the GE WI requirement

Eight or more units chosen from upper-division physics courses selected with the approval of the department:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHYS 3600</td>
<td>Data Acquisition and Control</td>
<td></td>
</tr>
<tr>
<td>PHYS 4600</td>
<td>Electronics</td>
<td></td>
</tr>
<tr>
<td>PHYS 4851-4853</td>
<td>Special Topics in Physics</td>
<td></td>
</tr>
<tr>
<td>PHYS 4851L-4852L</td>
<td>Special Topics in Physics Laboratory</td>
<td></td>
</tr>
<tr>
<td>PHYS 5100</td>
<td>Mathematical Methods of Physics II</td>
<td></td>
</tr>
<tr>
<td>PHYS 5400</td>
<td>Optics</td>
<td></td>
</tr>
<tr>
<td>PHYS 5500</td>
<td>Solid State Physics</td>
<td></td>
</tr>
<tr>
<td>PHYS 5700</td>
<td>Quantum Mechanics II</td>
<td></td>
</tr>
<tr>
<td>PHYS 5751-5753</td>
<td>Internship (max 3 units)</td>
<td></td>
</tr>
<tr>
<td>PHYS 5851-5853</td>
<td>Special Topics in Physics</td>
<td></td>
</tr>
<tr>
<td>PHYS 5851L-5852L</td>
<td>Special Topics in Physics Laboratory</td>
<td></td>
</tr>
<tr>
<td>PHYS 5951-5953</td>
<td>Independent Study (max 3 unit)</td>
<td></td>
</tr>
<tr>
<td>ASTR 3300</td>
<td>Astrophysics of Planetary Systems</td>
<td></td>
</tr>
<tr>
<td>ASTR 3310</td>
<td>Astrophysics of Galaxies and Cosmology</td>
<td></td>
</tr>
</tbody>
</table>

Total Units 75