Physics, A.A.

Degree Offered
- Associate of Arts

Nature of the Program
Following completion of an associate degree, there are two bachelor degree options for students in physics. The bachelor of science degree is for students wanting a career in research and is typically followed by graduate work in physics, materials science, astrophysics, or in other physical sciences. This bachelor of science degree program provides a comprehensive grounding in the fundamentals of physics and is usually accompanied by participation in research programs.

The bachelor of arts degree in physics is more flexible in that more free elective choices are available. The increased flexibility helps prepare a student for a career that combines a science background with subsequent professional training, such as secondary education or medical school.

The courses in physics provide a mix of theoretical concepts and practical examples. Each course within a degree plan builds upon the knowledge base acquired in previous courses and, together, these courses allow a student to acquire the combination of physical insight and mathematical skill needed for success in today's demanding job markets.

The associate degree program provides the first two years of undergraduate study for students planning to pursue a B.A. or B. S. Degree at West Virginia University or other comparable institutions.

Career Opportunities
Some graduates of the B.S. program accept positions in industry or in a government laboratory immediately, while many continue their education in graduate research programs. Career paths for physicists obtaining a B.A. degree may include secondary education, patent law, forensics, health physics, environmental engineering, journalism, government policy, and business management immediately or following further graduate training.

FACULTY

CHAIR
- Vicki Huffman - Ph.D. Biomedical Science
  Year @ PSC (2005)

ASSOCIATE PROFESSOR
- Joan Vogtman - M.S. Applied Physics
  Year @ PSC (2008)

General Education Foundations
Please use this link to view a list of courses that meet each GEF requirement. (http://registrar.wvu.edu/gef/)

NOTE: Some major requirements will fulfill specific GEF requirements. Please see the curriculum requirements listed below for details on which GEFs you will need to select.

<table>
<thead>
<tr>
<th>General Education Foundations</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>F1 - Composition &amp; Rhetoric</td>
<td>3-6</td>
</tr>
<tr>
<td>ENGL 101 &amp; ENGL 102</td>
<td></td>
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<tr>
<td>or ENGL 103</td>
<td></td>
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<tr>
<td>Introduction to Composition and Rhetoric and</td>
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<tr>
<td>Composition, Rhetoric, and Research</td>
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<tr>
<td>Accelerated Academic Writing</td>
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<tr>
<td>F2A/F2B - Science &amp; Technology</td>
<td>4-6</td>
</tr>
<tr>
<td>F3 - Math &amp; Quantitative Reasoning</td>
<td>3-4</td>
</tr>
<tr>
<td>F4 - Society &amp; Connections</td>
<td>3</td>
</tr>
<tr>
<td>F5 - Human Inquiry &amp; the Past</td>
<td>3</td>
</tr>
<tr>
<td>F6 - The Arts &amp; Creativity</td>
<td>3</td>
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<tr>
<td>F7 - Global Studies &amp; Diversity</td>
<td>3</td>
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<tr>
<td>F8 - Focus (may be satisfied by completion of a</td>
<td>9</td>
</tr>
<tr>
<td>minor, double major, or dual degree)</td>
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<tr>
<td>Total Hours</td>
<td>31-37</td>
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</tbody>
</table>
Please note that not all of the GEF courses are offered at all campuses. Students should consult with their advisor or academic department regarding the GEF course offerings available at their campus.

**Curriculum Requirements**

<table>
<thead>
<tr>
<th>GEF Requirements (4, 5, 6, and 7)</th>
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<tbody>
<tr>
<td>ENGL 101</td>
<td>6</td>
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<tr>
<td>&amp; ENGL 102</td>
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<tr>
<td>MATH 155</td>
<td>4</td>
</tr>
<tr>
<td>MATH 156</td>
<td>4</td>
</tr>
<tr>
<td>MATH 251</td>
<td>4</td>
</tr>
<tr>
<td>MATH 261</td>
<td>4</td>
</tr>
<tr>
<td>CHEM 115</td>
<td>4</td>
</tr>
<tr>
<td>&amp; 115L</td>
<td></td>
</tr>
<tr>
<td>CHEM 116</td>
<td>4</td>
</tr>
<tr>
<td>&amp; 116L</td>
<td></td>
</tr>
<tr>
<td>PHYS 111</td>
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<tr>
<td>PHYS 112</td>
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</tr>
<tr>
<td>WVUE 191</td>
<td>1</td>
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<tr>
<td>Electives</td>
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</table>

Total Hours 60

**Suggested Plan of Study**

**First Year**

<table>
<thead>
<tr>
<th>Fall</th>
<th>Hours</th>
<th>Spring</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>MATH 155 (GEF 3)</td>
<td>4</td>
<td>ENGL 101 (GEF 1)</td>
<td>3</td>
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<tr>
<td>CHEM 115 &amp; 115L (GEF 2)</td>
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<td>MATH 156 (GEF 8)</td>
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<tr>
<td>WVUE 191</td>
<td>1</td>
<td>CHEM 116 &amp; 116L (GEF 8)</td>
<td>4</td>
</tr>
<tr>
<td>GEF Elective (GEF 4)</td>
<td>3</td>
<td>PHYS 111 (GEF 8)</td>
<td>4</td>
</tr>
<tr>
<td>GEF Elective (GEF 5)</td>
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<td></td>
<td></td>
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15

<table>
<thead>
<tr>
<th>Second Year</th>
<th>Hours</th>
<th>Spring</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGL 102 (GEF 1)</td>
<td>3</td>
<td>MATH 261</td>
<td>4</td>
</tr>
<tr>
<td>MATH 251</td>
<td>4</td>
<td>GEF Elective (GEF 6)</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 112</td>
<td>4</td>
<td>GEF Elective (GEF 7)</td>
<td>3</td>
</tr>
<tr>
<td>Elective</td>
<td>3</td>
<td>Elective</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>14</td>
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<td>16</td>
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</table>

Total credit hours: 60

**Major Learning Outcomes**

**PHYSICS**

Upon successful completion of an A.A. degree, physics majors will be able to:

1. Solve basic conceptual and quantitative problems in theoretical mechanics and electricity and magnetism.
2. Perform accurate measurements of physical systems and communicate the results and implications of those measurements in writing.
3. Use mathematical and chemical concepts to solve physics-related problems.
4. Transfer into a bachelor degree program in physics.