GENERAL ACADEMIC INFORMATION

Minimum Graduation Requirements

1. 120 credit hours
2. 45 upper-division credit hours (3000-4999 level)
3. 2.0 CU cumulative GPA
4. Residency: Last 30 credit hours of degree must be completed while registered in the College of Letters, Arts, and Sciences at UCCS

Student Responsibilities

1. All academic policies set forth by the University, College, and academic department in the UCCS Catalog: catalog.uccs.edu
2. All course prerequisites designated by the University. Failure to meet course prerequisites may result in an administrative drop of the course from a student’s schedule. See degree audit for course prerequisites within the academic major.

MAJOR INFORMATION

Briefly defined, physics is the science that tries to understand the laws of nature and the relationship between energy and matter. However, it might be more appropriate to define physics as a way of thinking rather than as a profession. The field of physics trains students to take a logical, problem-solving approach in whatever situations they might find themselves. Physics students explore concepts and methods of science that can be applied in many different professional areas and research topics. Physics deals with everything from subatomic particles to black holes and the overall structure of the universe. Physicists use mathematical formulas to try to explain their theories and make predictions. Physicists investigate many of the latest discoveries such as massive neutrinos, blue semiconductor lasers, high temperature superconductors, black holes, and our expanding universe.

Major Requirements

<table>
<thead>
<tr>
<th>BS Physics Major (51-53 hours)</th>
<th>Course/Area</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>PES 1110</td>
<td>General Physics I – Calculus Based</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>PES 1120</td>
<td>General Physics II</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>PES 1160</td>
<td>Advanced Physics Lab I – Calculus Based</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>PES 2130</td>
<td>General Physics III</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>PES 2160</td>
<td>Advanced Physics Lab II</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>PES 3130</td>
<td>Modern Physics</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>PES 3170</td>
<td>Instrumentation Laboratory I</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>PES 3180</td>
<td>Instrumentation Laboratory II</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>PES 3210</td>
<td>Classical Mechanics</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>PES 3310</td>
<td>Principles of Electricity &amp; Magnetism</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>PES 3410</td>
<td>Thermodynamics and Statistical Mechanics</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>PES 4170</td>
<td>Optics Lab</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>PES 4810</td>
<td>Senior Physics Seminar</td>
<td>2</td>
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</table>

Auxiliary Requirements

<table>
<thead>
<tr>
<th>Course/Area</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM 1401/1402</td>
<td>General Chemistry I and Lab I</td>
</tr>
<tr>
<td>CHEM 1411/1412</td>
<td>General Chemistry II and Lab II</td>
</tr>
<tr>
<td>Computer Science</td>
<td>Complete one of the following: CS 1090, CS 1120, CS 1150, MAE 1090, PES 3140</td>
</tr>
<tr>
<td>MATH 1350</td>
<td>Calculus I</td>
</tr>
<tr>
<td>MATH 1360</td>
<td>Calculus II</td>
</tr>
<tr>
<td>MATH 2350</td>
<td>Calculus III</td>
</tr>
<tr>
<td>MATH 3400</td>
<td>Differential Equations</td>
</tr>
</tbody>
</table>

Traditional (18 hours) Energy Science (19 hours) Solid State

<table>
<thead>
<tr>
<th>Course/Area</th>
<th>Credit Hours</th>
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</thead>
<tbody>
<tr>
<td>PES 3250</td>
<td>3250</td>
</tr>
<tr>
<td>PES 3320</td>
<td>3 Technical Courses from list</td>
</tr>
<tr>
<td>PES 4250</td>
<td>ECON 1010</td>
</tr>
<tr>
<td>PES 4510</td>
<td>GEOL 1010</td>
</tr>
<tr>
<td>PES Elective from list in degree audit</td>
<td>4460</td>
</tr>
<tr>
<td>MATH elective 3100 or higher</td>
<td>2 Technical Courses from list</td>
</tr>
</tbody>
</table>
## General Education and Elective Requirements

| Composition (9 hours) | 1. ENGL 1310  
| 2. ENGL 1410  
| 3. ENGL 2090  
| 4. PORT 3000 (0 Credits) – Writing Portfolio  
| Reasoning Skills (4 hours) | MATH 1350  
| PES 4170  
| Area Requirements (27 hours) | 1. Humanities – 9 credit hours, must include one occurrence of Core Humanities  
| 2. Social Sciences – 9 credit hours, Energy Science must include ECON 1010  
| 3. Natural Sciences – CHEM 1401, CHEM 1402, CHEM 1411, CHEM 1412, Energy Science includes GEOL 1010  
| NOTE: Cannot select courses from primary major courses for area requirements.  
| Oral Communication, Cultural Diversity, and Global Awareness Requirements | One course from each list (see degree audit). All courses that fulfill these requirements may also count towards other general education or major requirements.  

### Compass Curriculum (12 hours)
- Explore and Navigate courses must be outside major and area requirements  
- Writing Intensive, Inclusiveness, and Sustainability courses can count towards other requirements within degree  

<table>
<thead>
<tr>
<th>Component</th>
<th>Course</th>
</tr>
</thead>
</table>
| Gateway | GPS 1010  
| Explore – Arts, Humanities and Cultures | See Degree Audit  
| Explore – Society, Behavior and Health | See Degree Audit  
| Explore – Physical and Natural World | See Degree Audit (Energy Science - GEOL 1010)  
| Navigate | HUM 3990 (included in LAS area requirements)  
| Summit | PES 4810 (included in major requirements)  
| Writing Intensive Courses (WIC) | 1. HUM 3990 (included in LAS area requirements)  
| Two courses with one upper-division (3000+ level) | 2. See Degree Audit  
| Inclusiveness | See Degree Audit  
| Sustainability | See Degree Audit  

## Four-Year Degree Plan

### Year One
- **FALL**
  - ENGL 1310  
  - PES 1110/1160  
  - MATH 1350  
  - GPS 1010  
  - **TOTAL**  
- **SPRING**
  - ENGL 1410  
  - PES 1120/2160  
  - MATH 1360  
  - **TOTAL**  

### Year Two
- **FALL**
  - PES 2130  
  - CHEM 1401/1402  
  - MATH 2350  
  - Explore – Society, Behavior and Health Course  
  - **TOTAL**  
- **SPRING**
  - PES 3130  
  - CHEM 1411/1412  
  - MATH 3400  
  - Computer Science Course  
  - **TOTAL**  

### Year Three
- **FALL**
  - ENGL 2090  
  - PES 3170 (FALL ONLY)  
  - PES 4170 (FALL ONLY)  
  - HUM 3990  
  - Physics Option Course  
  - **TOTAL**  
- **SPRING**
  - PES 3180 (SPRING ONLY)  
  - PES 3210 (SPRING ONLY)  
  - PES 3410 (SPRING ONLY)  
  - Physics Option Course  
  - **TOTAL**  

### Year Four
- **FALL**
  - Physics Option Course  
  - Physics Option Course  
  - Physics Option Course  
  - Humanities Elective  
  - Social Science Elective  
  - **TOTAL**  
- **SPRING**
  - PES 4810  
  - Physics Option Course  
  - Physics Option Course  
  - General Elective or Physics option Course  
  - Humanities Elective  
  - **TOTAL**  

Please note that this is an example degree program and your program may vary. Students are responsible for completing all course prerequisites.