# Engineering Physics 3+2

**Bachelor of Science (BS)**

This degree map is based on the 2023-24 Academic Catalog and is subject to change. Students should meet with their academic advisor each semester and use Degree Works to monitor their individual progress toward degree completion. The time it takes to earn a degree will vary based on several factors including summer/winter enrollment, dual enrollment and number of courses successfully completed each semester. We recommend taking a minimum of 15 credits each fall and spring semester.

## Sample 4-Year Plan

<table>
<thead>
<tr>
<th>First Year</th>
<th>Fall Courses</th>
<th>Credits</th>
<th>Spring Courses</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGT101 Intro to Engineering</td>
<td>3</td>
<td>MATH170 Calculus 2</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>MATH160 Calculus 1 (GenEd: Q)</td>
<td>4</td>
<td>PHYS212 General Physics 2</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>General Education course (U, First Year Seminar)</td>
<td>3</td>
<td>COMM101 Public Speaking (O)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>WRIT103 Foundations in Composition (W)</td>
<td>3</td>
<td>ENGT180 CAD &amp; Engineering Graphics</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>PHYS211 General Physics 1 (N)</td>
<td>4</td>
<td>General Education Course (H)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td><strong>Semester Total</strong></td>
<td><strong>17</strong></td>
<td><strong>Semester Total</strong></td>
<td><strong>17</strong></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Second Year</th>
<th>Fall Courses</th>
<th>Credits</th>
<th>Spring Courses</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGT141 Circuit Analysis</td>
<td>4</td>
<td>PHYS310 Modern Physics</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>PHYS301 Statics</td>
<td>3</td>
<td>PHYS302 Dynamics</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>MATH270 Calculus 3</td>
<td>4</td>
<td>CMSC115 Python Programming (T)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>ENG270 Technical Writing</td>
<td>3</td>
<td>ECC122 Principles of Microeconomics</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>General Education Course (D)</td>
<td>3</td>
<td>MATH370 Differential Equations</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>General Education (A or C)</td>
<td>3</td>
<td>General Education Course (A or C)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td><strong>Semester Total</strong></td>
<td><strong>17</strong></td>
<td><strong>Semester Total</strong></td>
<td><strong>18</strong></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Third Year</th>
<th>Fall Courses</th>
<th>Credits</th>
<th>Spring Courses</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHYS316 Digital Electronics</td>
<td>3</td>
<td>PHYS442 Math Methods</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>PHYS422 Thermodynamics</td>
<td>3</td>
<td>Major Elective (PHYS, CHEM, GEO, or MATH)*</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>CHEM121 General Chemistry 1</td>
<td>4</td>
<td>General Education Course (L)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>General Education Course (D or G or F)</td>
<td>3</td>
<td>General Education Course (E)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>MATH250 Discrete Math</td>
<td>3</td>
<td>General Education Course (G)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td><strong>Semester Total</strong></td>
<td><strong>16</strong></td>
<td><strong>Semester Total</strong></td>
<td><strong>15</strong></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Fourth Year</th>
<th>Fall Courses</th>
<th>Credits</th>
<th>Spring Courses</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students begin their time at Penn State University</td>
<td></td>
<td>Students continue taking courses at Penn State University</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Students may wish to lighten their load by taking a general education course(s) over winter or summer</td>
<td></td>
<td>Students will transfer 20 credits taken at Penn State back to Commonwealth University to complete a B.S. Engineering Physics degree</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Semester Total</strong></td>
<td><strong>0</strong></td>
<td><strong>Semester Total</strong></td>
<td><strong>20</strong></td>
<td></td>
</tr>
</tbody>
</table>

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**Winter/Summer College - Optional**

While not required, Winter and Summer sessions are offered each year and may help you stay on track or get ahead. You may take up to seven (7) credits during Winter College and up to 14 credits during Summer College.

Revised May 2024
## Curriculum Checklist

### Required Courses (73 credits)
- ENGT 101 Introduction to Engineering Technology (3)
- ENGT 180 Computer Aided Design & Engineering Graphics (3)
- ENGT 141 Circuit Analysis (4)
- PHYS 212 General Physics 2 (4)
- PHYS310 Modern Physics (3)
- PHYS301 Statics (3)
- PHYS302 Dynamics (3)
- PHYS 316 Digital Electronics (3)
- PHYS322 Thermodynamics (3)
- PHYS422 Math Methods (3)
- MATH 170 Calculus 2 (4)
- MATH 250 Discrete Math (3)
- MATH270 Calculus 3 (4)
- MATH370 Differential Equations (3)
- ENGL270 Technical Writing (3)
- MATH 160 Calculus 1 (Q) (4)
- PHYS 211 General Physics 1 (N) (4)
- CHEM 121 General Chemistry 1 (4)
- COMM101 Public Speaking (3)
- CMSC115 Python Programming (T) (3)
- ECC122 Principles of Microeconomics (3)
- WRIT103 Foundations in Composition (W) (3)

### Elective Courses (3 credits)
- Elective as suits the curriculum of Penn State (3)

### Transfer Courses (20 credits)
- Engineering courses from a Penn State Campus (vary depending on program)

## General Education Requirements (45 credits)

**Note:** Some requirements may be fulfilled by coursework in your major program including directed Gen Ed courses noted below

- **Foundations (15 credits)**
  - FYS (U): FYS100 First Year Seminar
  - Writing (W): WRIT103 Foundations in Composition
  - Oral Comm. (O): COMM101 Public Speaking
  - Quantitative (Q): MATH160 Calculus 1
  - History (H):

- **Interconnections (9 credits)**
  - Diversity (D):
  - Global Perspectives (G):
  - D or G or Foreign Lang. (F):

- **Citizenship & Responsibility (6 credits from at least two goals)**
  - Goal 1: Citizenship (S):
  - Goal 2 Ethical Reasoning (E):
  - Goal 3: Crit. Reasoning (R): ECC122 Principles of Microeconomics

- **Natural World & Technologies (9 credits)**
  - Natural World (N): PHYS211 General Physics 1
  - Natural World (N): CHEM121 General Chemistry 1
  - Technology (T): CMSC115 Python Programming

- **Creativity & Expression (6 credits)**
  - Literature (L):
  - Arts (A) or Creativity (C):

## Degree Requirements

All students must obtain a minimum of 120 credits, complete all General Education requirements, and all requirements for the selected major. Meet with your advisor and consult Degree Works to monitor your progress and for all graduation requirements.

A *minimum GPA of 2.0 in the major and overall are required.*

## Campus Locations

- **Bloomsburg**
  - Online; ☑ In-person; ☐ Blended
- **Lock Haven**
  - Online; ☐ In-person; ☑ Blended*
- **Mansfield**
  - Online; ☐ In-person; ☑ Blended*
- **Clearfield**
  - Online; ☐ In-person; ☐ Blended

*Pathway for Lock Haven and Mansfield campuses:

2 years blended learning at LH or MA, followed by

1 year in person at BL

2 years in person at Penn State University with 20 credits transferred back to CU to complete a BS Engineering Physics