

Department of Physics
West Chester University of Pennsylvania

Cooperative Physics-Engineering Dual-Degree Programs

B.S. Physics, West Chester University and B.S. Engineering,
From either The Pennsylvania State University or Philadelphia University

Semester 1

| | | | |
|-------------------|--|----|---|
| MAT 161 | Calculus I ¹ | 4 | G |
| PHY 115 | Engineering Graphics I | 1 | |
| WRT 120 | Effective Writing I | 3 | G |
| ECO 111 or 112 | Princ. of Econ. (Macro) Princ. of Econ. (Micro) | 3 | G |
| CSC 141 | Computer Science I | 3 | G |
| | Arts Gen. Ed. | 3 | G |
| | | 17 | |

Semester 2

| | | | |
|-------------------|--|----|---|
| MAT 162 | Calculus II | 4 | |
| PHY 170 | Physics I | 4 | |
| PHY 116 | Engineering Graphics II | 1 | |
| WRT 2XX | Effective Writing II | 3 | G |
| SPK 208 or 230 | Public Speaking Bus. & Prof. Speech | 3 | G |
| | | | |
| | | 15 | |

Semester 3

| | | | |
|---------|-----------------------------|----|---|
| MAT 261 | Calculus III | 3 | |
| MAT 311 | Linear Algebra ⁵ | 3 | |
| PHY 180 | Physics II | 4 | |
| CHE 103 | General Chemistry I | 3 | G |
| CRL 103 | Exper. Gen. Chem. I | 1 | |
| | Behav. & Soc. Gen. Ed. | 3 | G |
| | | 17 | |

Semester 4

| | | | |
|---------|--------------------------|----|---|
| MAT 343 | Differential Equations | 3 | |
| PHY 240 | Intro. to Modern Physics | 3 | |
| PHY 260 | Engineering Statics | 3 | |
| CHE 104 | General Chemistry II | 3 | |
| CRL 104 | Exper. Gen. Chem. II | 1 | |
| | 'J' Course | 3 | G |
| | | 16 | |

Semester 5

| | | | |
|---------|----------------------------------|----|---|
| PHY 300 | Mechanics | 3 | |
| PHY 310 | Inter. Physics Lab I | 2 | |
| PHY | Physics Elective ³ | 3 | |
| | Humanities Gen. Ed. | 3 | G |
| | 'I' Course ² | 3 | G |
| | 3-2 Elective Course ⁴ | 3 | |
| | | 17 | |

Semester 6

| | | | |
|---------|----------------------------------|----|---|
| PHY 320 | Inter. Physics Lab II | 2 | |
| PHY | Physics Elective ³ | 3 | |
| PHY | Physics Elective ³ | 3 | |
| | Humanities Gen. Ed. | 3 | G |
| | 3-2 Elective Course ⁴ | 3 | |
| | 3-2 Elective Course ⁴ | 3 | |
| | | 17 | |

A. Majors shall not be permitted more than one repeat of a Physics course.

B. Upper level courses (numbered 300 or above) must be completed with a grade of C or higher

C. MAT 161, MAT 162, PHY 170, and CHE 103/CRL103 must be completed with a grade of C or higher.

¹ See prerequisites in Undergraduate Catalog

² SCB 210 recommended, but not required.

³ The nine credits of Physics electives must be selected from among the following options: PHY 330 Electronics, PHY 350 Heat and Thermodynamics, PHY 370 Mathematical Physics, PHY 410 Optics, PHY 420 Atomic Physics and Quantum Mechanics, and PHY 430 Electricity and Magnetism. Speak with your advisor about the appropriate elective for your engineering discipline.

⁴ The 3-2 Elective Courses should be selected to satisfy course requirements at the engineering institution. Recommended courses for each institution are:

Pennsylvania State University: ENG 371 Technical Writing, an Art Course, a Health Course, or a course that fulfills the requirement of a particular major.

Philadelphia University: a History course, an Art course, a Language or Geography course, a Literature course, or a Philosophy course. You should consult with your advisor about specific courses.

⁵ This course is strongly recommended, but not required.

‘G’ denotes a course which fulfills the University’s General Education requirement. For a list of approved courses, consult the Undergraduate Catalog.

Transfer to The Pennsylvania State University or to Philadelphia University is contingent upon recommendation by the Department and having a minimum GPA which depends upon the selected Engineering program.

Note: The program with Penn State is not available to transfer students and must be completed in three years. These restrictions do not apply to the program with Philadelphia University. In addition, Penn State is currently **not** accepting 3-2 students into Aerospace Engineering, Bioengineering, Civil Engineering, or Mechanical Engineering.

Available Majors at Penn State: Biological Engineering, Chemical Engineering, Computer Engineering, Electrical Engineering, Engineering Science, Industrial Engineering, Nuclear Engineering, Energy Engineering, Environmental Systems Engineering, Materials Science and Engineering, Mining Engineering, and Petroleum and Natural Gas Engineering.

Available Majors at Philadelphia University: General Engineering, Architectural Engineering, Industrial and Systems Engineering, Mechanical Engineering, and Textile Engineering Technology.

Students intending to enroll in chemical engineering should take CHE 231 and 232, in mining engineering, ESL 201 and ESS 101, and in petroleum and natural gas engineering, ESL 201 and ESS 101. Students intending to enroll in electrical or nuclear engineering should take PHY 420, PHY 330, and PHY 430.