Major Course Requirements

A minimum of 73.5 hours

- **Required Core Courses (55.5 hours):**
  - ENGR 105 Introduction to Engineering 3
  - ENGR 131 Engineering Drawing 3
  - ENGR 211+212+213 Engineering Mechanics 3+3+3
  - ENGR 216 Circuit Analysis 4
  - INFS 115 Intro to Computer Programming 4
  - MATH 131+132+133 Calculus I,II,III 4+4+4
  - MATH 265 Elementary Linear Algebra 4
  - MATH 269 Elementary Differential Equations 4
  - PHYS 211+212+213 Physics with Calculus 4+4+4
  - PHYS 396 Seminar 0.5

- **Required Cognate Courses (18 hours):**
  - CHEM 111+112+113 General Chemistry 5+5+5
  - AT least one of the following courses: 3
    - COMM 105 Intro to Communication (3)
    - COMM 226 Public Speaking (3)

**Recommended Cognate Courses:**

- ENGL 102 College English II (4)
- MATH 267 Vector Calculus (4)

Pacific Union College has an affiliation with Walla Walla University, which offers emphases in Civil, Computer, Mechanical, and Electrical Engineering. Faculty of the WWU School of Engineering visit Pacific Union College regularly for guidance and counseling of students. This A.S. degree is designed to be compatible with their B.S. program, but prepares the student for entry into other engineering schools as well.

Students planning to pursue a B.S. in Engineering at any institution are encouraged to see the engineering advisor for guidance.

Student Learning Outcomes

**Students can:**

- Apply knowledge of mathematics, sciences, and other related disciplines as a means to identify, formulate, and solve applied science problems.
- Complete projects, conduct experiments, and analyze/interpret data individually as well as in groups.
- Communicate design and scientific information effectively.
- Recognize the need for and ability to engage in life-long learning.
- Express an understanding of professional and ethical responsibility.

Occupational Information

**What can I do with this major?**

Students completing this program have entry-level qualifications for the field of engineering and should have an adequate foundation for baccalaureate-level studies. The Engineering fields available are civil engineering, computer engineering, electrical engineering and mechanical engineering.

**Additional Education Required?**

While additional studies are not required to enter the profession, advancement in the chosen field is enhanced with a B.S. in Engineering.

**Public Sector vs. Denominational**

Most positions are in the public sector.

**Job Outlook**

Earnings for engineers vary significantly by specialty, industry, and education. Even so, as a group, engineers earn some of the highest average starting salaries among those holding bachelor’s degrees. As of May 2014, the median annual wage for civil, mechanical, computer, and electrical engineers were $82,050; $83,060; $108,430; and $93,260, respectively. (Note: data and figures taken from the U.S. Department of Labor Occupational Outlook Handbook: www.bls.gov/oaoh/architecture-and-engineering)

Those desiring to enter the workplace immediately rather than continue with the bachelor’s degree are suited to work as drafters and engineering technicians, which have a positive growth in the industries. Average starting salaries for these types of positions are in the high $40,000’s.
General Education Requirements

To view general education requirements for this major, please refer to page A-07, Summary of General Education Requirements: A.S. Degree.

How to Construct Your Own Program

1. Counsel with your advisor.
2. Consider your aptitudes, interests, and available courses.
3. Schedule major courses and cognates first.
4. Fill the rest of your schedule with G.E. requirements.
5. For the freshman year include English, Religion, and PE courses. Also include Basic Algebra I+II unless waived by previous work.

What the Degree Includes

A total of 90 quarter hours including:
1. General Education requirements.
2. Major requirements.
3. Minimum 2.0 GPA, overall and major.

For More Information

Physics & Engineering Department
Pacific Union College
One Angwin Avenue
Angwin, CA 94508
(707) 965-6590

Website: www.puc.edu/physics
E-mail: engineering@puc.edu

American Society of Civil Engineers www.asce.org

Institute of Electrical and Electronic Engineers: www.ieee.org

The American Society of Mechanical Engineers
www.asme.org

School of Engineering, Walla Walla University
http://www.wallawalla.edu/academics/areas-of-study/undergraduate-programs/engineering/

Sample Two-Year Program

The following plan illustrates a two-year program for a very well-prepared student.

The engineering advisor can help each student develop an individualized program. Some students may find a decelerated program to be more manageable, even though it may take more than two years for completion.

First Year

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Second Year

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