

Major Course Requirements

A minimum of 79 hours

► Required Core Courses (55 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	Computer Programming	4
MATH 131+132	Calculus I,II	4+4
MATH 267	Multivariable Calculus	5
MATH 269	Elementary Differential Equations	4
PHYS 111+112+113	General Physics I, II, III	4+4+4
PHYS 265	Calculus Applications for Physics	3

► Required Cognate Courses (24 hours):

CHEM 111+Lab	General Chemistry	5
COMM 105	Communication and Public Speaking	4
ENGL 102	College English	4
PSYC 121	General Psychology	4
FDNT or HLED	Any course	3

► Take one of the following:

HIST 101	History of World Civilization I (4)	4
HIST 102	History of World Civilization II (4)	
HIST 134	History of the United States I (4)	
HIST 135	History of the United States II (4)	

Recommended Cognate Courses:

CHEM 112+113	General Chemistry	5+5
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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 2022, the median annual wage for civil, mechanical, computer, and electrical engineers were \$89,940; \$96,310; \$132,360; and \$104,610, respectively. (Note: data and figures taken from the U.S. Department of Labor Occupational Outlook Handbook: www.bls.gov/ooh/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 low \$60,000'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

Mathematics and Physics Department
 Pacific Union College
 One Angwin Avenue
 Angwin, CA 94508
 (707) 965-7269

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

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	F	W	S
General Chemistry I + Lab	5	-	-
Calculus I,II	-	4	4
Computer Programming	-	-	4
Intro to Engineering	3	-	-
Engineering Drawing	-	3	-
College English II	-	4	-
General Education/Electives	8	5	8
	16	16	16
Second Year	F	W	S
Circuit Analysis	-	-	4
Engineering Mechanics	3	3	3
General Physics I,II,III	4	4	4
Calculus Application for Physics	-	-	3
Multivariable Calculus	-	-	5
Elementary Differential Equations	4	-	-
Communication and Public Speaking	-	4	-
General Education/Electives	5	5	-
Assessment Seminar	-	-	0.1
	16	16	19.1

* Courses marked (even) or (odd) are taught in alternate years only.
 2025-2026 is even, 2026-2027 is odd.