The Bachelor of Science degree in Engineering Physics (EPHYS) is offered through the cooperation of the University of the Pacific School of Engineering and Computer Science and the Department of Physics in the College of the Pacific. Engineering Physics is a field that provides broad training in physics, mathematics, and engineering design. The practitioner of engineering physics is often involved in the development of new devices and products using sophisticated physical concepts.

The engineering physics curriculum educates students to work in areas where technology is changing rapidly and where the boundaries of several traditional engineering disciplines overlap, such as lasers, sensors, robotics, materials, energy, and semiconductor materials, particularly in nano-scale electronic devices. The curriculum develops sufficient depth in both engineering and science to produce graduates who are able to relate basic knowledge to practical problems in engineering. The physicist is a person with the training of an applied physicist, and can function as either electrical engineer or mechanical engineer with a deeper understanding of physics applied to the two engineering disciplines.

COOPERATIVE EDUCATION PROGRAM
Co-op coordinators work with students to arrange 7 month full-time, paid jobs with engineering employers. (Co-op is optional for non-U.S. citizens)

GENERAL EDUCATION REQUIREMENTS
Students who enter the Engineering Physics Program as freshmen are required to take Pacific Seminars 1 & 2. Students also take four General Education (G.E.) courses. Two G.E. courses are required from Category I in different areas, and one course must be from Category II-A or II-C. All students take Pacific Seminar 3 and ENGR 30, which is a required G.E. II-B course. Transfer students should consult the Engineering Physics program director about the required courses.

ENGINEERING PHYSICS PROGRAM OBJECTIVES
Through their careers in engineering or related profession, Pacific graduates are expected to demonstrate the following within a few years of earning their Bachelor’s degree in Engineering Physics:

+ Competency in an engineering or science profession via promotion to positions of increasing responsibility, publications, and/or conference presentations.

+ Adaptability to new developments in science and technology by successfully completing or pursuing graduate education in engineering or related fields, or participating in professional development and/or industrial training courses. Graduates of the BSEPhys degree program will be prepared to build and sustain successful careers in engineering and science and actively engage in life-long learning.

For more information contact:
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Offices are located in Anderson Hall 210
engineering.pacific.edu
BACHELOR OF SCIENCE IN ENGINEERING PHYSICS - PROGRAM CURRICULUM

**GENERAL EDUCATION**

- PACS 001 [4] PACIFIC SEMINAR 1
- PACS 002 [4] PACIFIC SEMINAR 2
- PACS 003 [3] PACIFIC SEMINAR 3
- GEN. ED. [3-4] (I-A, I-B, OR I-C)*
- GEN. ED. [3-4] (II-A OR II-C)
- GEN. ED. [3-4] (I-A, I-B, OR I-C)*
- ENGR 030 [3] ENGR., ETHICS & SOCIETY (II-B)

*CATEGORY I GEN. EDS MUST BE FROM DIFFERENT AREAS.

**ENGINEERING PHYSICS CORE**

- COMP 051 [4] INTRO TO COMPUTER SCIENCE
- ECPE 040 [3] CIRCUITS
- ECPE 040L [1] CIRCUITS LAB
- ECPE 071 [3] DIGITAL DESIGN
- ECPE 071L [1] DIGITAL DESIGN LAB
- ECPE 121 [4] DIGITAL SIGNAL PROCESSING
- ECPE 131 [3] ELECTRONICS
- ECPE 131L [1] ELECTRONICS LAB
- ECPE 194 [0] CORE ASSESSMENT EXAM
- ECPE 195 [2] SENIOR PROJECT 1
- ECPE 196 [2] SENIOR PROJECT 2
- ENGR 010 [1] DEAN'S SEMINAR
- ENGR 020 [3] ENGINEERING MECHANICS

**ENGINEERING PHYSICS ELECTIVES**

- PHYS 127 [4] COMPUTATIONAL PHYSICS
- PHYS 137 [4] MATHEMATICAL PHYSICS
- PHYS 141 [4] COSMOLOGY
- PHYS 151 [4] ADVANCE PHYSICS LAB
- PHYS 170 [4] SOLID STATE PHYSICS
- PHYS 181 [4] CLASSICAL MECHANICS
- PHYS 183 [4] QUANTUM MECHANICS
- PHYS 191 [3-4]* INDEPENDENT STUDY
- PHYS 193 [3-4]* SPECIAL TOPICS
- PHYS 197 [3-4]* UNDERGRADUATE RESEARCH

**ADVANCED MATHEMATICS ELECTIVES (SELECT ONE)**

- MATH 100 [4] NUMERICAL ANALYSIS
- MATH 145 [4] APPLIED LINEAR ALGEBRA
- MATH 147 [4] CRYPTOGRAPHY
- MATH 153 [4] VECTOR ANALYSIS
- MATH 172 [4] GRAPH THEORY

FOUR TECHNICAL ELECTIVES MUST BE CHOSEN FROM THE LIST BELOW, WITH TWO (2) COURSES IN PHYSICS, TWO (2) IN THE SAME ENGINEERING DISCIPLINE TO FORM A COHESIVE PROGRAM.

- PHYSICS ELECTIVES (SELECT TWO)
- PHYSICS ELECTIVES (SELECT TWO)
- ADVANCED MATHEMATICS ELECTIVES (SELECT ONE)
- ADVANCED MATHEMATICS ELECTIVES (SELECT ONE)

*INDEPENDENT STUDY, AND UNDERGRADUATE RESEARCH CAN BE TAKEN FOR 1-4 UNITS; A MINIMUM OF 3 OR MAXIMUM OF 4 UNITS CAN COUNT AS AN ELECTIVE.