The Bachelor of Science degree in Electrical Engineering is offered by the University of the Pacific through the Department of Electrical and Computer Engineering (ECPE). Electrical engineering encompasses a wide range of topics, including computers, communication systems, automatic control systems, digital and embedded systems, electronics, energy conversion, signal and systems analysis, and integrated circuits. Challenging employment opportunities are found in design, manufacturing, research, education, medicine and management. All EE students must complete a team-oriented, multidisciplinary Senior Design Project, which provides an opportunity to apply engineering fundamentals and design methods to the solution of a real problem. Graduates of this program have the knowledge essential for entry into this dynamic field of engineering or to continue their education through graduate studies.

EE laboratories are continually being updated, and include all the standard electrical engineering test and measurement equipment. Students have easy access to all computer and laboratory equipment, and can conduct approved independent research.

ELECTRICAL ENGINEERING PROGRAM OBJECTIVES

Graduates of the BSEE degree program will be prepared to build and sustain successful careers in electrical engineering, and actively engage in life-long learning.

COOPERATIVE EDUCATION PROGRAM

Co-op coordinators work with students to arrange relevant full-time, paid jobs with engineering employers. 32 units of co-op work experience are required to graduate, although students have the option of pursuing 50 units. (Non-U.S. citizens are exempt from the co-op requirementrs.) Students who take 32 units of co-op work for a Fall or Spring semester plus one Summer semester. Students who take 50 units of co-op can work for different companies for a total of one year of work experience before they graduate.

GENERAL EDUCATION

Student who enter the Electrical Engineering 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 courses. Transfer students should discuss G.E. requirements with their advisor.

For more information contact:

Dr. Louise Stark, Chair and Professor
School of Engineering and Computer Science, University of the Pacific, Stockton, CA 95211
Email: lstark@pacific.edu ; Phone (209) 946-2153Offices are located in Anderson Hall

The Office of Admissions can provide applications and general information about the University. Phone (209) 946-2211 or www.pacific.edu/admission

Transfer students are welcome to inquire about entering the program at any level.

Bachelor of Science in Electrical Engineering– Program Curriculum

Mathematics and Basic Science
MATH 051 [4] Calculus I
MATH 053 [4] Calculus II
MATH 055 [4] Calculus III
MATH 057 [4] Differntial Equations
PHYS 053 [5] Physics I
PHYS 055 [5] Physics II
CHEM 025 or 027 [5] Gen Chemistry
Math elective [3-4] (See list below)

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] (I-A, I-B, or I-C)*
Gen. Ed. [3-4] (II-A or II-C)
ENGR 030 [3] Engr., Ethics & Society (II-B)
*Category I Gen. Eds must be from different areas.

Professional Practice (Co-op)
ENGR 181 [18]
ENGR 182 [14]
ENGR 183 [18]

32 units of Co-op are required to graduate, although students can opt to take 50 units. Non-U.S. citizens are exempt from Co-op.

Electrical Engineering Core
ECPE 005 [1] Intro to Elec & Comp Engr
ECPE 041 [3] Electric Circuits
ECPE 041L [1] Electric Circuits Lab
ECPE 071 [3] Digital Design
ECPE 071L [1] Digital Design Lab
ECPE 121 [4] Systems Analysis
ECPE 125 [4] Digital Signal Processing or ECPE 172 [4] Microcontrollers
ECPE 127 [3] Random Signals
ECPE 131 [3] Intro. to Integrated Circuits
ECPE 131L [1] Intro. to Integrated Circuits Lab
ECPE 141 [4] Advanced Circuits
ECPE 195 [2] Senior Project 1
ECPE 196 [2] Senior Project 2
ENGR 010 [1] Dean's Seminar
ENGR 025 [1] Prof. Practice Seminar
COMP 051 [4] Intro to Computer Science
PHYS 101 [4] Electricity and Magnetism
PHYS 161 [4] Thermal Physics or ENGR 122 [3] Thermodynamics
Electives (See list below)
- Three ECPE electives [3-4 units each]
- One COMP elective [3-4]
- One Other elective [3-4]

(Minimum Totals: 120 academic units: 32 CO-OP units)

Electives must be selected from the following list and include three from the ECPE category and one from each of the other categories. Courses should be selected to form a cohesive study plan.

COMP Elective (one)
COMP 053 Data Structures [4]
COMP 101 Application Programming [4]
COMP 127 Client-Server Systems [3]
COMP 129 Software Engineering [3]
COMP 135 Human-Computer Interface [3]
COMP 137 Distributed Computing [3]
COMP 141 Programming Languages [3]
COMP 147 Computing Theory [3]
COMP 155 Computer Simulation [4]
COMP 157 Design and Analysis of Algo. [4]
COMP 159 Computer Game Technologies [4]
COMP 161 Introduction to Bioinformatics [4]
COMP 163 Database Management Sys. [3]
COMP 173 Operating Systems [3]
COMP 175 System Admin. and Security [3]
COMP 191 Independent Study [3-4]*
COMP 197 Undergraduate Research [3-4]*

ECPE Electives (three)
ECPE 125 Intro. To DSP [4]
ECPE 132 Analog Circuits Design [4]
ECPE 135 Power Electronics [4]
ECPE 136 VLSI Design [4]
ECPE 151 Artificial Intelligence [3]
ECPE 153 Computer Graphics [3]
ECPE 155 Autonomous Robotics [4]
ECPE 161 Automatic Control Sys [4]
ECPE 162 Communication Systems [4]
ECPE 163 Energy Conversion [4]
ECPE 165 Power Systems [4]
ECPE 170 Comp Systems and Networks [4]
ECPE 173 Computer Organization [4]
ECPE 174 Advanced Digital Design [4]
ECPE 175 Emb. and Real-time Sys. [4]
ECPE 176 Computer Architecture [3]
ECPE 177 Computer Networking [4]
ECPE 178 Network Security [3]
ECPE 191 Independent Study [3-4]*
ECPE 197 Undergraduate Research [3-4]*

Other Electives (one)
BIOL 035 Envr: Concepts & Issues [4]
BIOL 041 Intro. to Biology [4]
BIOL 051 Principles of Biology [4]
BIOL 061 Principles of Biology [4]
BUSI 107 Marketing Management [4]
BUSI 143 Product Innovation [4]
CHEM 027 General Chemistry II [5]
CIVL 130 Fluid Mechanics I [4]
CIVL 132 Intro. to Environmental Engr. [4]
EMGT 170 Engr. Administration [4]
EMGT 172 Engineering Economy [3]
EMGT 174 Engr. Project Management [3]
ENGR 020 Engr. Mechanics I [3]
ENGR 120 Engr. Mechanics II [3]
ENGR 121 Mechanics of Materials [4]
ENGR 122 Thermodynamics [3]
GEOS 051 Physical Geology [4]
GEOS 053 Geol Evolution of the Earth [4]
GEOS 057 Earth System Science [4]
MECH 110 Instru. & Exp. Methods [4]
PHYS 057 Modern Physics [4]
PHYS 102 Electrodynamics [4]
PHYS 105 Optics [4]
PHYS 127 Computational Physics [4]
PHYS 141 Astrophysics [4]
PHYS 151 Advanced Physics Lab. [4]
PHYS 170 Solid State Physics [4]
PHYS 181 Classical Mechanics [4]
PHYS 183 Quantum Mechanics [4]

Advanced Math Electives (one)
MATH 110 Numerical Analysis [4]
MATH 145 Applied Linear Algebra [4]
MATH 152 Applied Analysis [4]
MATH 157 Applied Diff. Equations II [4]
MATH 174 Graph Theory [4]

* Independent Study and Undergraduate Research can be taken 1-4 units. A total minimum of 3 or maximum of 4 units can count as an elective.

Catalog year: 2008-2009