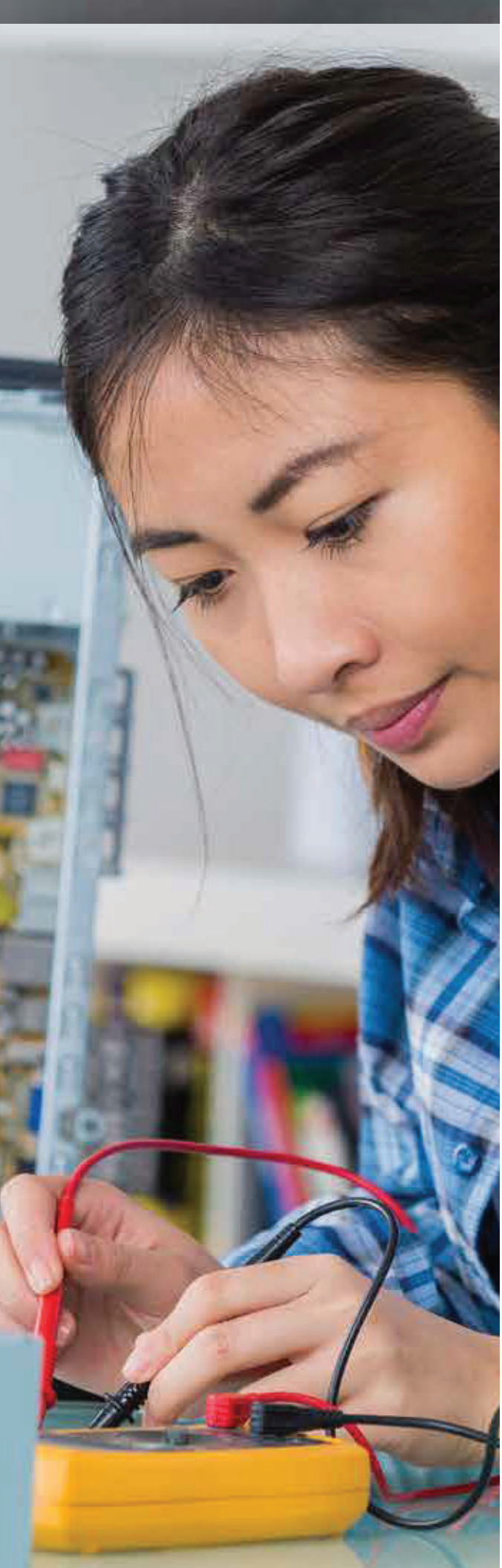

UNIVERSITY OF THE PACIFIC

Computer Engineering

The Bachelor of Science degree in Computer Engineering is offered by University of the Pacific through the Department of Electrical and Computer Engineering (ECPE). Computer engineers solve problems in hardware, software, systems, and networks that address almost every industry including: telecommunications, energy, health care, banking, networking, electronics, manufacturing, etc. The computer engineering program is accredited by the Engineering Accreditation Commission of ABET, https://www.abet.org, under the commission's General Criteria and Program Criteria Computer Engineering Programs.

All computer engineering students 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. The computer engineering laboratories include state-of-the-art software and hardware platforms, as well as standard test and measurement equipment. Students have easy access to computer and laboratory equipment and can conduct approved independent research.

COOPERATIVE EDUCATION PROGRAM (CO-OP)

CO-OP coordinators work with students to arrange 7 months full-time, paid jobs with engineering employers. (CO-OP is optional for non-U.S. citizens)

COMPUTER ENGINEERING PROGRAM OBJECTIVES

Through their careers in computer engineering or related professions, Pacific graduates are expected to demonstrate the following within a few years of earning their bachelor's degree in Computer Engineering:

+ Competency in the computer engineering 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, participating in professional development and/or industrial training courses, or pursuing professional licensure

For more information, contact:
Dr. Jeffrey Shafer, Associate Professor and Chair
jshafer@pacific.edu | 209-946-2302 | Anderson 230

UNIVERSITY OF THE PACIFIC | School of Engineering and Computer Science

BACHELOR OF SCIENCE IN COMPUTER ENGINEERING - PROGRAM CURRICULUM

MATHEMATICS & BASIC SCIENCE

MATH 051 [4] CALCULUS I
MATH 053 [4] CALCULUS II
MATH 055 [4] CALCULUS III
MATH 057 [4] DIFFERENTIAL EQUATIONS
PHYS 053 [5] PHYSICS I
PHYS 055 [5] PHYSICS II
ECPE 127 RANDOM SIGNALS
DISCRETE MATH ELEC. [4] (SEE LIST BELOW)

COMPUTER ENGINEERING CORE:

IDEA 010 - INTERDISCIPLINARY DESIGN & SUCCESS
IDEA 020 - INTERDISCIPLINARY DESIGN & INNOVATION
ECPE 041 [3] CIRCUITS
ECPE 041L [1] CIRCUITS LAB
ECPE 071 [3] DIGITAL DESIGN
ECPE 071L [1] DIGITAL DESIGN LAB
ECPE 121 [4] DIGITAL SIGNAL PROCESSING
ECPE 131 [4] ELECTRONICS
ECPE 170 [4] COMPUTER SYSTEMS AND NETWORKS
ECPE 172 [4] MICROCONTROLLERS
ECPE 174 [4] ADVANCED DIGITAL DESIGN

GENERAL EDUCATION

CORE 1 [3] PROBLEM SOLVING AND COMMUNICATIONS
CORE 2 [4] WRITING AND CRITICAL THINKING
GEN ED [3-4] ARTISTIC PROCESS & CREATION
GEN ED [3-4] CIVIC & GLOBAL RESPONSIBILITY
GEN ED [3-4] LANGUAGES AND NARRATIVES
GEN ED [3-4] SOCIAL INQUIRY
ENGR 030 [3] ENGR., ETHICS & SOCIETY (II-B)

ECPE 195 [2] SENIOR PROJECT 1
ECPE 196 [2] SENIOR PROJECT 2
ENGR 025 [1] PROF. PRACTICE SEMINAR
COMP 051 [4] INTRO TO COMPUTER SCIENCE
COMP 053 [4] DATA STRUCTURES

PROFESSIONAL PRACTICE (CO-OP)

ENGR 181 [16]
ENGR 182 [16]

ELECTIVES (SEE LIST BELOW)

- TWO ECPE ELECTIVES [3-4]
- ONE COMP ELECTIVE [3-4]
- TWO SOECS ELECTIVES [6-8]

MINIMUM TOTALS: 120 ACADEMIC UNITS: 32 CO-OP UNITS

COMPUTER ENGINEERING ELECTIVES:

COMP ELECTIVES

Any 100 or 200 level courses, such as:
COMP 127 [4] WEB APPLICATIONS
COMP 129 [4] SOFTWARE ENGINEERING
COMP 135 [3] HUMAN-COMPUTER INTERFACE DESIGN
COMP 137 [3] PARALLEL COMPUTING
COMP 141 [4] PROGRAMMING LANGUAGES
COMP 147 [4] COMPUTING THEORY
COMP 151 [3] ARTIFICIAL INTELLIGENCE
COMP 153 [3] COMPUTER GRAPHICS
COMP 155 [4] COMPUTER SIMULATION
COMP 157 [4] DESIGN/ANALYSIS OF ALGORITHMS
COMP 159 [4] COMPUTER GAME TECHNOLOGIES
COMP 163 [4] DATABASE MANAGEMENT SYSTEMS
COMP 173 [4] OPERATING SYSTEMS
COMP 175 [3] SYSTEM ADMIN. AND SECURITY COMP
191 [3-4]* INDEPENDENT STUDY
COMP 197 [3-4]* UNDERGRADUATE RESEARCH COMP
2XX ANY GRADUATE COMP COURSE

DISCRETE MATH ELECTIVES

COMP 047 [4] DISCRETE MATH FOR COMP. SCIENCE
MATH 074 [4] DISCRETE & COMBINATORIAL MATH
MATH 174 [4] GRAPH THEORY

ECPE ELECTIVES

Any 100 or 200 level course such as:
ECPE 124 [4] DIGITAL IMAGE PROCESSING
ECPE 133 [4] SOLID STATE DEVICES
ECPE 135 [4] POWER ELECTRONICS
ECPE 136 [4] VLSI DESIGN
ECPE 141 [4] ADVANCED CIRCUITS
ECPE 144 [4] APPLIED ELECTROMAGNETICS
ECPE 155 [4] AUTONOMOUS ROBOTICS
ECPE 161 [4] AUTOMATIC CONTROL SYSTEMS
ECPE 162 [4] COMMUNICATION SYSTEMS
ECPE 163 [4] ENERGY CONVERSION
ECPE 165 [3] POWER SYSTEM ANALYSIS
ECPE 177 [4] COMPUTER NETWORKING
ECPE 178 [3] COMPUTER NETWORK SECURITY
ECPE 191 [3-4]* INDEPENDENT STUDY
ECPE 193 [3-4]* SPECIAL TOPICS
ECPE 197 [3-4]* UNDERGRADUATE RESEARCH
ECPE 2XX ANY GRADUATE ECPE COURSE

SOECS ELECTIVE

ANY BENG, CIVL, COMP, ECPE, ENGR, EMGT, IDEA OR MECH COURSE (ECPE OR COMP MUST BE 100 LEVEL.
EXCLUDES ENGR 10, 19, 25, 30, 150, 181, 182, 183)
EXCLUDES IDEA 010, 020 and 132

32 UNITS OF CO-OP ARE REQUIRED TO GRADUATE. CO-OP IS OPTIONAL FOR NON-U.S. CITIZENS.
***ECPE 191: INDEPENDENT STUDY, AND ECPE 197: UNDERGRADUATE RESEARCH CAN BE TAKEN FOR 1-4 UNITS; A MINIMUM OF 3 OR MAXIMUM OF 4 UNITS CAN COUNT AS AN ECPE ELECTIVE. ECPE 193: SPECIAL TOPICS MAY QUALIFY AS AN ECPE ELECTIVE. GRADUATE (200 LEVEL) COURSES MAY ALSO COUNT AS ECPE ELECTIVES. A 3.0 GPA IS REQUIRED TO TAKE A 200 LEVEL COURSE AS AN ELECTIVE.**