Computer Engineering Technology

The computer engineering technology program develops and prepares graduates who will be an integral part of the high-tech economy of Pennsylvania and the nation. The program is a strong combination of theoretical and practical concepts in electrical engineering technology, computer engineering technology, mathematics, computer science, natural science and general education that lead to the Bachelor of Science degree. The bachelor's degree program emphasizes applying current technology to practical problems and situations. Graduates of the program are prepared to find employment as computer engineering technologists. Students will gain knowledge and skills in digital electronics, microprocessor engineering, embedded systems, computer networking, computer systems design and software engineering.

Educational Program Objectives

The general goal of the computer engineering technology program is to provide students with a broad understanding of fundamental engineering knowledge and technical skills as well as in-depth knowledge in the areas of computer science, computer engineering technology, digital electronics, mathematics and physical sciences. The objectives of the CET program are to produce graduates who can:

1. Function effectively individually and in team-oriented open-ended activities, using critical thinking to assess and evaluate complex technical and non-technical problems in an industrial environment.
2. Communicate effectively in oral, written, visual and graphical modes in interpersonal and group situations at a level of effectiveness expected by industry employers.
3. Remain technically current and adapt to rapidly changing technologies through further formal or informal education.
4. Identify and understand professional ethical situations in business, industry and society.
5. Blend theoretical and practical knowledge and skills to solve technical problems.
6. Apply embedded based technologies and software engineering to solve technical problems.
7. Understand and apply project specifications, documentation and standards requirements within the engineering design process.

Employment Opportunities

The curriculum provides students with a comprehensive education to help them find employment in the private, public or government sector. Graduates of the bachelor's degree program are qualified for engineering technologist positions. As the economy is becoming increasingly high-tech, the demand for computer engineering technology graduates is expected to escalate. The curriculum prepares students for positions in the aerospace, embedded systems design, software design/implementation/verification, automotive, utilities, medical, computer and communication industries. Employment opportunities are diverse and plentiful and exist in the areas of software development, hardware systems design, microcomputer/microcontroller system designs, computer networking, product sales and marketing, all with excellent salaries.

University Resources

The computer engineering technology labs are located in two buildings: Helsel Hall and Eberly Science and Technology Center. Helsel Hall has a studio laboratory that includes lecture and laboratory facilities used exclusively for the first two years of the engineering technology programs. It is equipped with high-quality instrumentation packages appropriate for the first two years of the programs. Eberly has a number of laboratories with a more advanced set of instrumentation devices and a dedicated senior projects lab. Laboratories feature lab benches housing networked computers with Internet access and laboratory printing support.

Admission

Admission to the program is open to entering freshman and transfer students. Applicants to the program with an educational background in a field related to computer engineering technology will be evaluated on an individual basis.

Internships

Students are encouraged to complete an internship as part of their degree requirements. Students work in an organization related to their employment goals where they receive practical experiences in applying what they have learned through course work. Internship credits may be applied to the degree as program electives using course CET495, Computer Engineering Technology Internship.

Curriculum

The following schedule of courses provides a recommended framework for completing this program of study in four years. To ensure that they are making satisfactory academic progress, students should consult with their faculty adviser, ensure that they complete necessary prerequisites and required courses in sequence, and complete approximately 15 credits each semester.
Computer Engineering Technology

Freshman Year

First Semester ......................................................... 14 credits
CSC 120 Problem Solving/Program Construction ................ 3 cr.
EET 110 Electrical Circuits I ........................................ 4 cr.
GET 130 Intro to Engineering Technology ....................... 3 cr.
MAT 199 Pre-Calculus ................................................ 3 cr.
UNI 100 First-Year Seminar ........................................ 1 cr.

Second Semester ...................................................... 16 credits
CSC 124 Computer Programming I .................................... 3 cr.
EET 160 Electric Circuits II .......................................... 4 cr.
ENG 101 English Composition I ...................................... 3 cr.
MAT 195 Discrete Mathematics ..................................... 3 cr.
General Education ..................................................... 3 cr.

Sophomore Year

Third Semester ......................................................... 16 credits
CET 235 Digital Electronics Design ................................. 4 cr.
CSC 265 Object-Oriented Programming ............................ 3 cr.
ECO 100 Elements of Economics ................................... 3 cr.
ENG 217 Scientific & Technical Writing ......................... 3 cr.
MAT 281 Calculus I ..................................................... 3 cr.

Fourth Semester ...................................................... 14 credits
CET 270 Intro to Microprocessor Design ......................... 4 cr.
CSC 328 Data Structures ............................................. 3 cr.
MAT 282 Calculus II .................................................... 3 cr.
PHY 101 College Physics I .......................................... 4 cr.
General Education ..................................................... 6 cr.

Junior Year

Fifth Semester ......................................................... 14 credits
CET 335 Microprocessor Interfacing ................................. 4 cr.
CET 350 Technical Computing using Java ........................ 3 cr.
EET 215 Intro to Instrumentation ................................... 3 cr.
PHY 202 College Physics II ......................................... 4 cr.

Sixth Semester ......................................................... 16 credits
CET 360 Microprocessor Engineering ............................... 4 cr.
CSC 306 FORTRAN ................................................... 3 cr.
CSC 400 Operating Systems ......................................... 3 cr.
MAT 341 Linear Algebra ............................................. 3 cr.
General Education ..................................................... 3 cr.

Seventh Semester ..................................................... 16 credits
CET 440 Computer Networking ....................................... 4 cr.
CET 490 Senior Project I .............................................. 3 cr.
Technical Elective ..................................................... 4 cr.
General Education ..................................................... 3 cr.

Eighth Semester ....................................................... 16 credits
CET 492 Senior Project II ............................................. 3 cr.
CSC 378 Computer Architecture ................................. 3 cr.
Technical Elective ..................................................... 4 cr.
General Education ..................................................... 6 cr.

Note: The policies and procedures described here may be reviewed and revised as the need arises. This fact sheet should be used as an information guide.

Program Contact Information

Contact the Department of Applied Engineering and Technology by phone at 724-938-4085.

California University of Pennsylvania is a proud member of the Pennsylvania State System of Higher Education. Located in the borough of California, just 35 miles from Pittsburgh, Cal U serves about 8,200 undergraduate and graduate students.

Cal U's main campus houses academic buildings, dining and recreation facilities, and six suite-style residence halls.

Cal U's upper campus includes the Vulcan Village apartments, athletic facilities at Roadman Park, and space for student meetings and outdoor recreation at SAIF Farm.

Cal U's Global Online is the University's virtual campus, offering degree and certificate programs 100% online.

FINANCIAL AID

For information on student loans and undergraduate scholarships, visit www.calu.edu or call 1-888-412-0479.

Questions About Admissions?

Office of Admissions
California University of Pennsylvania
250 University Ave.
California, PA 15419-1394

Phone: 724-938-4404
Toll-free: 888-412-0479
Fax: 724-938-4564
E-mail: inquiry@calu.edu

www.calu.edu

A proud member of the Pennsylvania State System of Higher Education.

Policies and Procedures: Note that the policies and procedures described above may be reviewed and revised at any time. This fact sheet should be used as an informational guide. For details on current policies and procedures, contact the Provost/Vice President of Academic Affairs at 724-938-4407.

Rev 5/14