Laboratory Tour & Information

100, 132—Digital Systems Design Lab State-of-the-art laboratory for teaching logic, state-machine, and CPU design. Using custom software to deliver laboratory instruction, the student has a virtually paperless laboratory experience. The software contains tutorials, simulations, and design tools for the student to study both digital logic and its instrumentation. This lab space is an integrated lecture/lab room which enables the CPE program to bring Learn-by-Doing to the next level.

124—Cisco Advanced Networks Lab A $1 million joint industry effort from Cisco Systems and Intel Corporation established this state-of-the-art network lab. It contains enough equipment for 32 students to perform experiments simultaneously. The way the lab is configured allows us to do a lot of things that you couldn’t do at other universities in the nation – hands-on router configurations, router testing, starting with layer 1 and moving up the protocol stack. Hardware funding and ongoing support provided by Cisco Systems Inc.

126—Circuits and Electronics Lab As a foundational lab, this is an integrated lecture/lab classroom similar to the Digital Systems Design Labs and is equipped with the newest Agilent scopes. Students learn the fundamentals of circuits and electronics and more advanced topics like digital signal processing for applications such as digital audio processing.

145—Capstone Lab This room offers a large project-based learning space for Electrical and Computer Engineers. Student teams design-build-test to an external client’s project specifications. It is a true learn by doing experience. Teamwork and ethical implications of computer system design are explored, as well as honing presentation skills. Past projects include assistive technologies for the disabled, autonomous vehicles, and user software applications.

235—Computer Lab A general purpose compute facility equipped with HP computers, the lab provides both Windows and Linux environments for students in computer science and computer engineering courses. This facility allows students to work on assignments and projects independently and in groups. We have added Nvidia CUDA cards to these systems to encourage GPU development.

255—Game Design Lab This space is a dedicated team-oriented lab for Game Development and Graphics. Collection of high-end PCs, stereo enabled monitors, 3D glasses, tablets for artistic creation, and 3D sound system. Students learn and conduct research in Computer Graphics, Animation, and Game Design-Development.

257—Human Computer Interaction (HCI) Lab Provides support for human-computer interaction, artificial intelligence, and computer literacy. Equipped with PCs, iMacs, Game Engines, Mobile devices, eye-tracking glasses, Google glasses, wearable computing devices and much more. Used to teach and conduct research in the areas of HCI, User Interface Design, and for Usability studies.

Associated Clubs
Computer Engineering students are represented by the Computer Engineering Society, a social and professional development community for CPE majors. Because of the diverse nature of the computer engineering program, students are active in numerous clubs throughout the college and campus community including the IEEE Student Branch, Association for Computing Machinery, Society of Women Engineers, and Women Involved in Software and Hardware.
Computer Engineering

Mission Statement

The mission of the Computer Engineering Program (CPE) is to provide students with a well-rounded education encompassing the theory and practice of selected, balanced topics in electrical engineering and computer science, to enable students to contribute and continue their education in a wide range of computer-related engineering careers. The program seeks to emphasize "hands-on" experience, problem solving skills, the creative process and responsible action. Through professional development activities, faculty strive for excellence in teaching and contributions to the state-of-the-art.

Learn by Doing

The curriculum provides a sound theoretical background along with current, practical engineering knowledge. Students build upon core curriculum and choose technical electives in specializations including Computer Architecture, Robotics and Computer Based Systems, Graphics and Multimedia, Computer Networks, Electronics Implementation and VLSI, and Controls. During the last year, students participate in a practical senior design project where they demonstrate their understanding of engineering principles and create a unique college experience.

From the Faculty

Technology has enhanced how people live in many different ways from improving our quality of life, enabling better communication and enriching how we spend our leisure time. It's no surprise that CPE plays a vital role in these impressive advancements. Our alumni have developed prosthetic retinas, "smart" devices, and created the code that drives most of the popular social media sites and web browsers that are very much a part of our daily lives. With the important contributions being made by computer engineering professionals today, there's no doubt that CPE majors will play a central role developing the solutions of tomorrow.

Our nationally recognized CPE program is interdisciplinary based upon the foundation of Computer Science and Electrical Engineering. We develop more highly qualified computer engineers than any other school in the country! Our students benefit from close interactions with faculty throughout their academic career. Faculty, not graduate students, teach our state-of-the-art laboratory and projects. You'll experience the hands-on learn by doing educational philosophy unique to Cal Poly by working on lab projects beginning your first quarter. Additionally, through a variety of co-curricular activities, including over 300 student clubs, you'll also have an opportunity to meet new friends and create a unique college experience.

Program Description

Computer Engineering combines the software related development of Computer Science and the hardware related development of Electrical Engineering into a comprehensive course of study. As a Computer Engineer, you work with others to integrate computer software and hardware. This integration provides a unique perspective of how computers work and enables computer engineers to fully harness the potential of computing platforms.

The benefit of understanding two fields of study translates into a graduate with highly marketable skills—our students also qualify for many of the positions advertised to Electrical Engineering or Computer Science majors. This flexibility is a tremendous advantage especially in an uncertain job market and provides our majors with extraordinary employment opportunities.

Career Paths

Graduates with computer application skills in the traditional engineering fields, computer and data processing skills, and hardware and software development are in high demand and according to current employment data this trend will continue to increase. Companies like Apple, Google, Microsoft, Facebook and the defense industry actively recruit our graduates. Additionally, with the proliferation of computer platforms in all aspects of people's lives, the diversity of jobs where computer engineers work is also increasing at places like St. Jude Medical, Sotera Wireless and Dreamworks. Graduates of our program are heavily recruited and have been shown to have a higher degree of career success than graduates of the other public schools in California. Some of our graduates have gone on to serve as executives, entrepreneurs and leaders of many high tech industries, particularly those in micro processing and computing. For more information about salary ranges and companies who actively hire computer engineering majors, visit: http://cpe.calpoly.edu/about/where-you-work/

Computer Engineering Department
Building 204 Room 215
Office 805.756.1229 Fax 805.756.1458
www.cpe.calpoly.edu

Notes:

* Most GENERAL EDUCATION COURSES can be taken in any order as long as prerequisites are met. ** Course can be taken previously or concurrently.

Legend:

- Major (06)
- Support (57)
- General Ed. (49)

Curriculum Map

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The CPE faculty is dedicated first and foremost to student learning. Unlike most research focused campuses, teaching is highly valued at Cal Poly. The faculty derives satisfaction from student interaction, especially in the hands-on laboratory setting. Our students experience an atmosphere of camaraderie and mutual respect, because they work side-by-side their professors to solve problems together.