

The Bachelor of Science Degree in Computer Engineering

The Bachelor of Science degree in computer engineering is accredited by the Engineering Accreditation Commission of the Accreditation Board for Engineering and Technology (ABET). Computer Engineering encompasses design and analysis of both hardware and software systems. Engineering problem solving, a key component of our Computer Engineering program, is practiced in all areas studied for this degree. Computer Engineering is the application of knowledge and technology to the exciting, challenging, and ever-changing field of computer systems. Computer Engineering majors are prepared for employment in positions such as Digital Design Engineers, Software Systems Analysts, Computer Architects, Scientific and Technical Programmers, Microprocessor-based Systems Designers, Instrumentation Systems Designers, Integrated Circuit Designers, and Systems Engineers.

The educational objectives of the Computer Engineering Program are to produce graduates possessing:

- A. a thorough understanding of one or more of the following areas:
 - design of digital systems
 - computer architecture
 - software engineering
 - microprocessor control of systems
 - data acquisition and signal processing;
- B. the knowledge and skills to advance in a dynamic technological environment and to succeed in advanced study;
- C. a strong liberal arts background and the ability to communicate well orally and in writing;
- D. the abilities to develop new knowledge and new skills, to analyze and solve problems creatively, and to serve in a variety of roles such as a responsible team member or an effective team leader.

The major in computer engineering focuses on an applied approach. There is a comprehensive laboratory component to provide hands-on experiences. Computers are used throughout the curriculum as part of the engineering design process. Commercial EDA (Electronic Design Automation) software is used extensively. In addition to requiring successful completion of the liberal learning curriculum, the major in computer engineering requires successful completion (a grade of C- or better) of the following courses in major and elective studies:

- 1) ECON 201 or 202;
- 2) CHEM 121/121L-122;
- 3) PHYS 201/201L-202/202L, 340, 341;
- 4) MATH 140, 240, 320;
- 5) ENGR 121, 211/211L-212/212L, 213;
- 6) CPEN 214, 315/315L, 371W, 414, 431, 499W;
- 7) CPSC 125, 150/150L-250/250L, 270, 410, 427;
- 8) Six hours from professional electives: CPEN 422, 495, CPSC 360, 420, 425, 428, 440, 450, 470, 471, 480, 495, PHYS 421, PCSE 495 (only one 495 course allowed with advisor's permission); CPSC 501 and 502 (with advisor's permission).

Because of the tight prerequisite structure, it is strongly recommended that students take their major courses in the following order:

First year: CPSC 125, 150/150L, MATH 140-240, PHYS 201/201L-202/202L;

Second year: CPEN 214, 315/315L, CPSC 250/250L, CPSC 270, ENGR 121, 213, MATH 320;

Third year: CPEN 371W, 414, CPSC 427, ENGR 211/211L-212/212L, PHYS 340, 341; CHEM 121/121L-122, ECON 201 or 202;

Fourth year: CPEN 431, CPEN 499W, CPSC 410, two professional electives, ECON 201 or 202.