

COMPUTER ENGINEERING

Mission Statement

The mission of the Department of Electrical and Computer Engineering is to offer baccalaureate degree programs of excellence in electrical engineering and computer engineering that serve the needs of the West Florida region, the state, and the nation. The goal of the baccalaureate degree programs is to prepare students to embark upon a professional career in electrical engineering, computer engineering, or to pursue graduate study. The Bachelor of Science degrees in Electrical Engineering and Computer Engineering are accredited by the Engineering Accreditation Commission of the Accreditation Board for Engineering and Technology (EAC/ABET).

Student Learning Outcomes

UWF Computer Engineering graduates should be able to do the following:

Content

- Recognize and apply concepts, principles and theories in the following areas:
 - Mathematics, including differential and integral calculus, differential equations, linear algebra, and complex variables, and discrete mathematics
 - Core electrical and computer engineering topics: basic circuit analysis, signals and systems, electronics, digital logic, and programming
 - Microprocessors, computer architecture, networks and systems, and data structures.
 - Probability and statistics
 - Hardware/software interaction and trade-offs
- Describe the interrelatedness of contemporary issues in a global and society context with computer engineering solutions

Critical Thinking

- Use modern engineering techniques, skills, and tools, including computer-based tools for analysis and design of electrical and computer circuits and systems
- Identify, formulate and solve novel electrical and computer engineering problems
- Design and conduct scientific and engineering experiments including analysis and interpretation of data

Communication

- Communicate effectively in writing
- Convey technical material through oral presentations

Integrity/Values

- Describe the ethical and professional responsibilities of an engineer
- Make and defend ethical judgments in keeping with professional standards
- Profess commitment to life-long learning to satisfy the ABET accreditation requirement

Project Management

- Function effectively on multi-disciplinary teams
- Deliver engineering results that meet performance standards for cost, safety, and quality

Evaluation of Student Learning Outcomes

The electrical and computer engineering department uses the following assessment tools to determine the outcome achievements for computer engineering and for on-going continuous program improvements: (1) a major capstone design course which is based on the knowledge and skills acquired in earlier courses work within the curriculum, (2) collected sample graded work showing outcomes met by each course and a list of students who met those outcomes each semester, and separately collated to show that each student meets all outcomes of the program (3) Exit Interview Surveys by graduating seniors, (4) Alumni Surveys, and (5) Employer surveys.

Job Prospects for Computer Engineering Graduates

Computer engineers find career opportunities in a wide variety of companies or organizations involving the design, development, building, testing, and operation of computer systems. Computer engineers deal with both hardware and software (programming) problems. In designing a computer system, computer engineers must decide how much of the computer logic to put into hardware and how much to put into software. The work of the computer engineers and computer scientists is closely related. Computer engineers tend to be more involved with the computer hardware, whereas computer scientists tend to be more involved with the computer software and less emphasis on hardware. The typical job functions include research, design, develop, and test computer or computer-related equipment for commercial, industrial, military, or scientific use. They may supervise the manufacturing and installation of computer or computer-related equipment and components. According to the US Federal Bureau of Labor Statistics, the demand for computer engineering is expected to continue growing.

For US Occupational Outlook: <http://www.bls.gov/oco/ocos031.htm#nature>

For US Occupational Employment & Wages: <http://www.bls.gov/oes/current/oes172061.htm>

Florida Job Statistics: <http://www.labormarketinfo.com/library/ep.htm>

***Find Out More about Computer Engineering at UWF:
www.uwf.edu/ece***