CONST 191T. Technical Topics in Construction (1-3; max total 6)
Prerequisite: permission of instructor. Investigation and analysis of selected subjects in construction. (2-6 lab hours)

CONST 193. Internship/Work Experience (3)
Open only to construction majors. Prerequisites: junior standing and permission of instructor. Supervised work experience in construction related industries. Periodic consultations with instructor. **FS**

Department of Electrical and Computer Engineering

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Program Description

Electrical Engineering. The Electrical Engineering Program is accredited by the Engineering Accreditation Commission of the Accreditation Board for Engineering and Technology (ABET).

Electrical engineers design and develop electronic circuits, equipment and systems in the areas of electromagnetics (antennas; radar, radio, and television systems), communications (telephone systems, satellite communications; laser and optical fiber communications; aircraft and missile guidance systems), computers and digital systems (computers, microprocessors, and microcomputers; artificial intelligence), physical electronics and optics (transistors; integrated circuits; optical display devices; lasers; optical fibers), power systems and energy conversion (electric power generation; analysis and synthesis of power transmission and distribution protection systems design; on-line power control protection systems design), and control systems (computer control, robotics, automated manufacturing, intelligent sensors). Hands-on experiences are gained through laboratory work and design projects.

Computer Engineering. The Computer Engineering Program is accredited by the Engineering Accreditation Commission of the Accreditation Board for Engineering and Technology (ABET). Computer engineering is a discipline which allows the student to obtain expertise in the design, programming, and applications of computers. It prepares the graduate for professional practice or graduate studies. The program combines the following:

a. A strong emphasis on electrical engineering (primarily electronic circuits and systems)
b. A broad basis in mathematics, physical science, and general engineering
c. Fundamentals of computer science including programming methodology, software engineering, and operating systems
d. Introductory and advanced concepts in the design of computers and computer systems

A rich set of technical area courses is available to allow students to broaden their knowledge within any of several computer engineering areas.

Career Opportunities

According to a report by the American Electronics Association, a shortage of electrical and computer engineers is projected for the next several years; it is anticipated that the demand for electrical and computer engineering positions will increase. The demand for electrical and computer engineering position will continue to increase. New developments are evolving in optical communications, microelectronics, intelligent controls, computers, radar, microwave communications, and innovative alternative energy sources at an explosive pace which should assure a solid growth pattern for electrical and computer engineers into the foreseeable future.

Mission and Educational Objectives

The mission of the Department of Electrical and Computer Engineering is to fulfill the needs of the region and state by providing an undergraduate and graduate technical education in electrical engineering and computer engineering to a diverse group of students. Additionally, the department strives to continually update its rigorous program of study in order to qualify its graduates for positions in industry located in the region and beyond while providing sufficient programmatic breadth and depth to assure its graduates a successful practice in the profession. Furthermore, students are grounded in the rigorous scientific and theoretical foundations of the discipline, in order not only to enable graduates to enter and be successful in any advanced level educational program of their choosing, but also to be able to build upon this strong foundation and extend it to new depths.

The Electrical and Computer Engineering programs award degrees to students who within three to five years of graduation, through work experience and/or graduate education in the engineering field, will be expected to have gown technically and be productive in their respective workplaces, to be capable of addressing technical problems of increasing complexity, to communicate and function effectively in a team environment, and to demonstrate ability for independent learning and continued professional as well as ethical development.

The mission of the department complements and is enhanced by a graduate program leading to the M.S. in Engineering. For more information, see the Master of Science in Engineering Program, pages 320-321.

The faculty members possess depth and breadth in their specialty areas and are active in bringing these experiences and skills to the classroom. The identifiable strengths of the academic program are the laboratory and hands-on experience for students, the proper attention given to the scientific and mathematical foundation of electrical engineering and computer engineering, and the rigor of upper-division courses coupled with design and culminating senior projects. The technical and liberal arts components of the curriculum provide the students with the opportunity for gaining self-development, technical competence, and awareness of economic and ethical responsibilities. The technical curriculum includes (l) basic engineering science, (2) core electrical and computer engineering subjects, and (3) a junior-/senior-level choice for more depth in communications and analog systems, power systems and controls, or digital systems and computers.

The department requires mandatory advising to help students make sound academic decisions.

Organizations

Student chapters of the Institute of Electrical and Electronic Engineers and Eta Kappa Nu (the national honor society for electrical engineers) are active in the department. The Lyles College of Engineering, in addition, has chapters of Tau Beta Pi, the Society of Women Engineers, the Society of Hispanic Engineers, and the National Society of Black Engineers.