

**ECE DEPARTMENT CO-TERMINAL DEGREE:**

**BACHELOR OF SCIENCE IN COMPUTER ENGINEERING / MASTER OF SCIENCE IN ELECTRICAL ENGINEERING**

**Program objectives:**

The objective of this program is to provide an accelerated path for interested undergraduate students in computer engineering to complete the Bachelor of Science in Computer Engineering (BSCPE) and Master of Science in Electrical Engineering (MSEE) degrees with an integrated curriculum, which can be completed in five years. Students enter the co-terminal degree program at the beginning of their third year of study with advanced planning in the fourth year courses to support the curricular requirements in the fifth (final) year.

The undergraduate portion of the curriculum for this co-terminal degree program puts emphasis on both theory and practical applications of computer engineering. Computer engineering involves the design and application of computer hardware and computer software. Computer hardware consists of the physical components that implement a computer system: processor and memory chips, circuit boards, and peripheral devices. Computer software consists of computer programs that accomplish a specific task using sequences of simple, programmable steps.

The graduate portion of the curriculum for this co-terminal degree, the Master of Science in Electrical Engineering program, builds a strong foundation across several areas of study within electrical engineering and specialization within one area, which includes an option to pursue thesis research under the guidance of a faculty adviser. Areas of study include communication and signal processing; computers and microelectronics; and power and control systems.

**Admission requirements:**

Student must be enrolled in BSCPE program, have completed at least 65 credit hours of study toward that degree with a minimum overall GPA of 3.25, and have completed at least 15 credit hours of ECE coursework with a minimum (major) GPA of 3.25.

# Requirements for BSCPE-MSEE Co-Terminal Degree

## **ECE major requirements 28**

ECE 100, 211, 213, 218, 242, 311, 441, 485

## **Computer Science Major Requirements 16**

CS 115, 116, 330, 331, 351, 450

## **Mathematics Requirements 24**

MATH 151, 152, 251, 252, 474, plus MATH 333 or 471

## **Physics Requirements 11**

PHYS 123, 221, 224

## **Chemistry Requirement 3**

CHEM 122

## **Engineering Science Course Requirement 3**

MMAE 200 or MMAE 320

## **Humanities and Social Sciences Requirements 21**

(per General Education specifications)

## **Junior Computer Engineering Elective 3 to 4**

ECE 307, 308, 312, or 319

## **Science Elective 3**

Science Elective BIOL 105, BIOL 107, BIOL 114, BIOL 115, MS 201, or CHEM 126

## **Professional Computer Engineering Electives 6 to 8**

400-level ECE courses identified with (P) in the course descriptions except ECE 448, or 400-level CS courses except CS 401, CS 402, CS 460, CS 461 or CS 485. A maximum of 3 credit hours of ECE 491, CS 491, ECE 497, or CS 497 may be used.

## **Hardware-design Elective 4**

ECE 429 or ECE 446

## **Computer Systems/Software Elective 3 or 4**

ECE 407, ECE 408, ECE 443, ECE 449, CS 425, or CS 487

## **Interprofessional Projects 6**

## **Graduate Professional ECE Electives (total of 18 credit hours)**

18 credit hours of Graduate Professional ECE Electives at the 500-level or higher must satisfy major and minor requirement rules and course selection rules defined for MSEE three areas (Communications and Signal Processing, Computers and Microelectronics, and Power and Control).

## **Graduate ECE or Technical Electives (total of 6 credit hours)**

- MSEE students with thesis option must use these 6 credit hours for thesis (ECE 591)
- MSEE students with non-thesis option must select with advisor approved 400-level (excluding 494 and 497) or higher courses from engineering, computer science, mathematics, or science.

**TOTAL CREDIT HOURS: 155-159**

## BSCPE-MSEE Co-Terminal Degree Requirements

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