

ECE DEPARTMENT CO-TERMINAL DEGREE:**BACHELOR OF SCIENCE IN ELECTRICAL ENGINEERING / MASTER OF SCIENCE IN COMPUTER ENGINEERING****Program objectives:**

The objective of this program is to provide an accelerated path for interested undergraduate students in electrical engineering to complete the Bachelor of Science in Electrical Engineering (BSEE) and Master of Science in Computer Engineering (MSCPE) 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 electrical engineering. Electrical engineering is concerned with the generation, transmission and utilization of electrical energy and with the transmitting and processing of information. Electrical engineers are involved in the analysis, design and production of electric power, radio, radar, television, computing, telecommunication, control, and information systems.

The graduate portion of the curriculum for this co-terminal degree, the Master of Science in Computer Engineering program, builds a strong foundation in all aspects of the design and development of computer systems, with a specialization in a major area. Students have the option to pursue thesis research under the guidance of a faculty adviser. Areas of study include computer hardware design, computer networking and telecommunications, and computer system and application software.

Admission requirements:

Student must be enrolled in BSEE 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 BSEE-MSCE Co-Terminal Degree

Electrical engineering requirements ECE 100, 211, 213, 218, 242, 307, 308, 311, 312, 319

Professional ECE Electives 400-level ECE courses identified with (P) in the course descriptions; at least two of the electives must include a laboratory component. Courses at the 500-level may be substituted with advisor approval, and a maximum of three credits of ECE 491 or ECE 497 may be included with advisor approval.

Mathematics Requirements MATH 151, 152, 251, 252, 333, 474

Physics Requirements PHYS 123, 221, 224

Chemistry Requirement CHEM 122

Engineering Science Course Requirement MMAE 200 or MMAE 320

Computer Science Requirements CS 115, 116

Humanities and Social Sciences Requirements (per General Education specifications)

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

Interprofessional Projects

Graduate Professional CPE Electives (total of 18 credit hours)

18 credit hours of Graduate Professional CPE Electives at the 500-level or higher that must satisfy major and minor requirements and course selection rules defined for MSCE three areas (Computer Hardware Design, Computer Systems Software, and Networks and Telecommunications).

Graduate CPE or Technical Electives (total of 6 credit hours)

- MSCE students with thesis option must use these 6 credit hours for thesis (ECE 591)
- MSCE 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: 155-157

BSEE-MSCPE Co-Terminal Degree Requirements

First Semester	Cr-hr	Second Semester	Cr-hr
MATH 151 Calculus I	5	MATH 152 Calculus II	5
CHEM 122 Principles of Chemistry I	3	PHYS 123 General Physics I	4
CS 115 Obj.-Oriented Programming I	2	BIOL 107 or 115, or CHEM 126, or MS 201	3
ECE 100 Introduction to the Profession	3	CS 116 Obj.-Oriented Programming II	2
Social Science Elective	3	HUM 102 or 104 or 106	3
TOTAL	16	TOTAL	17
Third Semester	Cr-hr	Fourth Semester	Cr-hr
MATH 252 Intro. to Differential Equations	4	MATH 251 Multivar. & Vector Calculus	4
PHYS 221 General Physics II	4	PHYS 224 Gen. Physics III for Engineers	3
ECE 211 Circuit Analysis I	4	ECE 213 Circuit Analysis II	4
ECE 218 Digital Systems	3	ECE 242 Digital Computers/Computing	3
TOTAL	15	Social Science Elective	3
		TOTAL	17
Fifth Semester	Cr-hr	Sixth Semester	Cr-hr
MATH 333 Matrix Alg. & Complex Var.	3	ECE 308 Signals and Systems	3
IPRO Interprofessional Project	3	MMAE 200 or 320	3
ECE 307 Electrodynamics	4	ECE 312 Electronic Circuits	4
ECE 311 Engineering Electronics	4	ECE 319 Fund. of Power Engineering	4
Humanities Elective (300-level or higher)	3	Social Science Elective	3
TOTAL	17	TOTAL	17
Seventh Semester	Cr-hr	Eighth Semester	Cr-hr
Professional ECE Elective w/lab	4	Professional ECE Elective w/lab	4
Professional ECE Elective	3/4	Professional ECE Elective	3/4
MATH 474 Probability & Statistics	3	Professional ECE Elective	3
IPRO Interprofessional Project	3	CS 331 Data Structure and Algorithm	3
Humanities Elective (300-level or higher)	3	Humanities or Social Science Elective	3
TOTAL	16/17	TOTAL	16/17
Ninth Semester	Cr-hr	Tenth Semester	Cr-hr
Graduate Professional CPE Elective	3	Graduate Professional CPE Elective	3
Graduate Professional CPE Elective	3	Graduate Professional CPE Elective	3
Graduate Professional CPE Elective	3	Graduate Professional CPE Elective	3
Graduate Professional CPE or Tech. Elective	3	Graduate Professional CPE or Tech. Elective	3
TOTAL	12	TOTAL	12