Joint BS in Electrical Engineering/MS in Electrical and Computer Engineering

Degree Requirements

The joint Bachelor of Science in Electrical Engineering (BSEE) and Master of Science in Electrical and Computer Engineering (MSECE) is designed for undergraduates with outstanding academic performance who desire to pursue graduate studies in electrical and computer engineering, or who wish to prepare themselves for advanced placement in the workplace. Students will earn both a BSEE degree and an MSECE degree upon completion of the program, with 8 hours of coursework shared between the two degrees.

The requirements for completion of the joint degree are identical to the completion of these two separate degrees; however, there are 8 hours of shared coursework may be used for both degrees. Completion of 120 semester hours at the undergraduate level; plus 8 shared hours counting toward both degrees; plus 28 semester hours at the graduate level will result in joint BSEE/MSECE degree.

Students who have completed at least 30 hours of ECE core courses and have an overall institutional GPA of 3.25 or higher can apply for the joint program. Undergraduate students admitted into the joint program can register for two technical-elective ECE courses and receive graduate credit for them. In taking 400-level courses as graduate-level courses, students may take advantage of differential credit to earn 4 hours (in each course respectively) instead of the typical 3 hours (or they may earn 5 hours if the course is already a 4-hour course with a laboratory component). These two courses designated for credit in both degrees will require pre-approval by an academic advisor and will be recorded in the student's academic record by the ECE Student Affairs Office; in addition, the ECE Student Affairs Office will submit the necessary paperwork to allow the undergraduate student to register for the graduate section of these courses that will be used at the undergraduate level to fulfill 8 hours of technical elective requirements, and at the graduate level to fulfill required coursework for the MS course-only option.

Sample Course Schedule

Course	Title	Hours
Freshman Year		
First Semester		
MATH 180	Calculus I	4
CHEM 122	Matter and Energy	3
CHEM 123	Foundations of Chemical Inquiry I	2
ENGL 160	Academic Writing I: Writing in Academic and Public Contexts	3
ECE 115	Introduction to Electrical and Computer Engineering	4
ENGR 100	Engineering Success Seminar [a]	1
	Hours	**16**
Second Semester		
MATH 181	Calculus II	4
PHYS 141	General Physics I (Mechanics)	4
ENGL 161	Academic Writing II: Writing for Inquiry and Research	3
CS 107	Introduction to Computing and Programming	4
General Education Core course		3
	Hours	**18**
Sophomore Year		
First Semester		
MATH 210	Calculus III	3
PHYS 142	General Physics II (Electricity and Magnetism)	4
PHYS 260	Introduction to Thermal Physics	2
ECE 265	Introduction to Logic Design	4
General Education Core course		3
	Hours	**16**
Second Semester		
MATH 220	Introduction to Differential Equations	3
MATH 310	Applied Linear Algebra	3
ECE 225	Circuit Analysis	4
ECE 266	Introduction to Embedded Systems	4
ECE 341	Probability and Random Processes for Engineers	3
	Hours	**17**
Junior Year		
First Semester		
ECE 310	Discrete and Continuous Signals and Systems	3
ECE 322	Introduction to Electromagnetics and Applications	4
ECE 340	Electronics I	4
ECE 346	Solid State Device Theory	4
	Hours	**15**
Second Semester		
ECE 311	Communication Engineering	4
ECE 317	Digital Signal Processing I	4
ECE 342	Electronics II	4
General Education Core courses		6
	Hours	**18**
Senior Year		
First Semester		
ECE 396	Senior Design I	2
ECE 350	Principles of Automatic Control	4
Technical Electives		5
General Education Core course		3
	Hours	**14**
Second Semester		
ECE 397	Senior Design II	2
ECE 499	Professional Development Seminar	0
Technical Electives		12
	Hours	**14**
Fifth Year		
First Semester		
MS Coursework		14
	Hours	**14**
Second Semester		
MS Coursework		14
	Hours	**14**
	Total Hours	**156**

a *ENGR 100 is a one-semester-hour course, but the hour does not count toward the total required for graduation.*