

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

## Degree Requirements

The joint Bachelor of Science in Computer Engineering (BSCE) 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 4 BSCE 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 program are identical to the completion of the two separate degrees; however, 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 hours at the graduate level will result in joint BSCE/MSECE degrees.

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, which may apply up to 8 hours to 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
<b>Freshman Year</b>		
<b>First Semester</b>		
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 <sup>a</sup>	1
<b>Hours</b>		<b>16</b>
<b>Second Semester</b>		
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
<b>Hours</b>		<b>15</b>
<b>Sophomore Year</b>		
<b>First Semester</b>		
MATH 210	Calculus III	3
PHYS 142	General Physics II (Electricity and Magnetism)	4
CS 151	Mathematical Foundations of Computing	3
ECE 265	Introduction to Logic Design	4
General Education Core course		3
<b>Hours</b>		<b>17</b>
<b>Second Semester</b>		
MATH 220	Introduction to Differential Equations	3
PHYS 260	Introduction to Thermal Physics	2
ECE 225	Circuit Analysis	4
ECE 266	Introduction to Embedded Systems	4
CS 251	Data Structures	4
<b>Hours</b>		<b>17</b>
<b>Junior Year</b>		
<b>First Semester</b>		
MATH 310	Applied Linear Algebra	3
ECE 310	Discrete and Continuous Signals and Systems	3
ECE 340	Electronics I	4
ECE 341	Probability and Random Processes for Engineers	3
ECE 366	Computer Organization	3
<b>Hours</b>		<b>16</b>
<b>Second Semester</b>		
ECE 333	Computer Communication Networks I	4
ECE 465	Digital Systems Design	3
ECE 466	Computer Architecture	3
ECE 467	Introduction to VLSI Design	4
General Education Core courses		3
<b>Hours</b>		<b>17</b>
<b>Senior Year</b>		
<b>First Semester</b>		
ECE 396	Senior Design I	2
Technical Electives		7
General Education Core courses		6
<b>Hours</b>		<b>15</b>
<b>Second Semester</b>		
ECE 397	Senior Design II	2
ECE 499	Professional Development Seminar	0
Technical Electives		10
General Education Core course		3
<b>Hours</b>		<b>15</b>
<b>Fifth Year</b>		
<b>First Semester</b>		
MS Coursework		14
<b>Hours</b>		<b>14</b>
<b>Second Semester</b>		
MS Coursework		14
<b>Hours</b>		<b>14</b>
<b>Total Hours</b>		<b>156</b>