

# ELECTRICAL AND COMPUTER ENGINEERING FIVE-YEAR ACCELERATED DEGREE BACHELOR AND MASTER OF SCIENCE PROGRAM

Accelerated degree programs reduce the time to a master's degree and provide credentials that will serve the student throughout his/her adult professional career. Graduates of the accelerated degree program are awarded an Electrical and Computer Engineering MS degree in addition to their Electrical Engineering BS degree. The accelerated degree program encourages students to pursue a graduate degree in order to broaden their educational background and their career opportunities. A graduate engineering education is key to innovation and may lead to additional career opportunities and success. A graduate degree has become far more common in the work place and a master's level engineering education gives a great return on your investment.

## Requirements

The Electrical and Computer Engineering (ECE) Department offers a five-year accelerated program through which students can obtain a Bachelor of Science degree as well as a Master of Science degree. The combined five-year program provides students with the opportunity to obtain these degrees in less time than would be required when pursuing them independently. The five-year program offers a simplified process for admission to the graduate school.

Students typically apply to the accelerated Master's degree program at the end of their third year. Students follow the standard undergraduate curriculum for the first three years, and then complete the baccalaureate degree requirements during their fourth year while taking up to two graduate courses. Up to six graduate course credits taken during the fourth year may be applied towards both the undergraduate and master's degree requirements. After receiving the baccalaureate degree, students will take an additional eight courses (for a total of ten courses) to complete the MS degree requirements in the fifth year. This accelerated degree may be completed in five years without interruption.

Students accepted in this program are expected to have an overall GPA of 3.00 or higher and receive approval of the faculty advisor. Students will be awarded the BS in Electrical Engineering when all requirements are met, usually at the end of the fourth year. The MS degree will be awarded when all graduate requirements of the combined degree curricula have been satisfied, usually at the end of the fifth year.

### Accelerated Degree Curriculum

Students must develop a plan of study for the MS portion of the degree with approval of their academic advisor, including the following:

### Thesis Option

Code	Title	Credits
All Requirements for BS in Electrical Engineering <sup>1</sup>		128
ECEG 5415	Engineering Applications of Numerical Methods	3

ECEG 6971	Thesis I	3
ECEG 6972	Thesis II	3
Select two elective courses from ECE		6
Select three elective courses from approved Engineering, Math, or Business graduate courses		9
<b>Total Credits</b>		<b>152</b>

<sup>1</sup> Requirements are the same as those listed for the BS, except that students may select up to two graduate-level electives to fulfill the major elective requirement.

### Non-Thesis Option

Code	Title	Credits
All Requirements for BS in Electrical Engineering <sup>1</sup>		128
ECEG 5415	Engineering Applications of Numerical Methods	3
Select four elective courses from ECE		12
Select three elective courses from approved Engineering, Math, or Business graduate courses		9
<b>Total Credits</b>		<b>152</b>

<sup>1</sup> Requirements are the same as those listed for the BS, except that students may select up to two graduate-level electives to fulfill the major elective requirement.

**Note:** A minimum of 30 credits must be completed at the graduate level.

### Electrical and Computer Engineering Electives

Possible electives may include any courses from the ECE Elective Domains:

Code	Title	Credits
<b>Power and Energy</b>		
ECEG 5361	Green Power Generation	3
ECEG 5377	Power Security and Reliability	3
ECEG 5385	Power Generation and Distribution	3
ECEG 5386	Fault Analysis in Power Systems	3
ECEG 5505	Advanced Power Electronics	3
<b>Communications Systems</b>		
ECEG 5379	Communication Systems	3
ECEG 5480	Wireless Systems I	3
<b>Electronic Systems</b>		
ECEG 5315	Nanoelectronics I	3
ECEG 5323	Thermal Management of Microdevices	3
ECEG 5335	Microelectronics	3
ECEG 5355	Sensor Design and Application	3
ECEG 5378	Electromagnetic Compatibility	3
ECEG 5405	Electronic Materials	3
ECEG 5510L	Product Design Lab	1
ECEG 5520L	System Design Lab	1
<b>Computer Engineering</b>		
ECEG 5303	Industrial Automation	3
ECEG 5325	Computer Graphics	3
ECEG 5346	Computer Systems Architecture	3
ECEG 5406	Advanced Digital Design	3

ECEG 5460	Network Programming	3
ECEG 5470	Network Embedded Systems	3
<b>Biomedical Engineering</b>		
ECEG 5309	Biosensors	3
ECEG 5311	Biomaterials	3
ECEG 5314	Introduction to Molecular Modeling	3
ECEG 5331	Biomedical Signal Processing	3
ECEG 5332	Biomedical Imaging	3
ECEG 5333	Biomedical Visualization	3
ECEG 5375	Bioelectronics	3
ECEG 5387	Instrumental Analysis in Biomedical Engineering	3
ECEG 5407	Computational Genomics	3