

# DUAL BACHELOR OF SCIENCE WITH A MAJOR IN COMPUTER SCIENCE AND MASTER OF SCIENCE IN THE FIELD OF COMPUTER ENGINEERING

The School of Engineering and Applied Science offers a dual bachelor of science with a major in computer science (<http://bulletin.gwu.edu/engineering-applied-science/computer-science/bs/>) (BS) and master of science in the field of computer engineering (<http://bulletin.gwu.edu/engineering-applied-science/electrical-computer-engineering/computer-engineering/>) (MS) degree program. The program allows students to take up to 6 graduate credits as part of their undergraduate program, thereby decreasing the number of credits normally required for the master's degree. All requirements for both degrees must be fulfilled.

## Credit sharing

Undergraduate students in the dual degree program should consider taking two of the MS courses (for a total of 6 credits) from the list below during the BS program and counting them as technical electives. The selected courses are shared, i.e., counted toward both the BS and MS degrees. The optimal selection of MS courses taken during the BS program depends on the student's intended area of focus within the graduate degree. Prior to enrolling in shared courses, students must consult with their computer science academic advisor and with the chair of the department of electrical and computer engineering.

Code	Title	Credits
CSCI 4331	Cryptography	
or CSCI 6331	Cryptography	
CSCI 4341	Continuous Algorithms	
or CSCI 6341	Continuous Algorithms	
CSCI 4342	Computational Linear Algebra and Applications	
or CSCI 6342	Computational Linear Algebra and Applications	
CSCI 4345	Introduction to Quantum Computing	
or CSCI 6345	Introduction to Quantum Computing	
CSCI 4364	Machine Learning	
or CSCI 6364	Machine Learning	
CSCI 4366	Neural Networks and Deep Learning	
or CSCI 6366	Neural Networks and Deep Learning	
CSCI 4415	Real-Time and Embedded Systems	
CSCI 4431	Computer Networks I	

or CSCI 6431	Computer Networks
CSCI 4511	Artificial Intelligence Algorithms
CSCI 4527	Introduction to Computer Vision
or CSCI 6527	Introduction to Computer Vision
CSCI 4531	Computer Security
or CSCI 6531	Computer Security
CSCI 4541	Network Security
or CSCI 6541	Network Security
CSCI 6002	Introduction to Data Structures and Their Applications
CSCI 6212	Design and Analysis of Algorithms
CSCI 6312	Graph Theory and Applications
CSCI 6461	Computer System Architecture *
ECE 4535	Computer Architecture and Design *
or ECE 6005	Computer Architecture and Design

\* Required course. Credit cannot be earned for CSCI 6461 and also ECE 4535 or ECE 6005.