MASTER OF SCIENCE IN THE FIELD OF COMPUTER ENGINEERING

The master of science in the field of computer engineering degree program provides students with the latest knowledge and skills training to address contemporary advances in computer systems architecture and networking. It also addresses the rapidly growing use of multi-core processors, real-time embedded systems, VLSI and ASIC design modules, digital signal processors, and networked computing platforms.Students learn sophisticated computer architecture and integrated circuit design techniques using industry-standard computer-aided design tools and choose between two areas of focus: computer architecture and high-performance computing, and MEMs, Electronics, and Photonics.

Specific admission requirements are shown on the Graduate Program Finder (http://www.gwu.edu/all-graduate-programs).

Visit the program website (http://www.ece.seas.gwu.edu/master-science-computer-engineering) for additional information.

REQUIREMENTS

The following requirements must be fulfilled: 30 credits, including 15 credits in required courses and 15 credits in elective courses. Thesis and non-thesis options are available. Students should contact the department concerning these options.

Students select one of the areas of focus leading to the Master of Science degree including computer architecture and high-performance computing, and MEMS, electronics, and photonics.

Computer Architecture and High-Performance Computing

Code	Title	Credits
Required		
ECE 6005	Microcomputer Systems Architecture	
At least five of the following courses:		
ECE 6105	Introduction to High-Performance Computing	
ECE 6120	Advanced Microarchitectures	
ECE 6125	Parallel Computer Architecture	
ECE 6130	Big Data and Cloud Computing	
ECE 6140	Embedded Systems	
ECE 6150	Design of Interconnection Networks for Parallel Computer Architectures	
ECE 8150	Advanced Topics in Computer Architecture	
Electives		
12 credits in elective courses; normally no more than two courses taken outside the Department of Electrical and Computer Engineering may be counted toward the requirements for the degree.		

MEMS, Electronics, and Photonics

Code	Title	Credits
Required		
ECE 6030	Device Electronics	
4 of the following:		
ECE 6213	Design of VLSI Circuits	
ECE 6214	High-Level VLSI Design Methodology	
ECE 6215	Introduction to MEMS	
ECE 6216	RF/VLSI Circuit Design	
ECE 6218	Advanced Analog VLSI Circuit Design	
ECE 6221	Introduction to Physical Electronics	
ECE 6240	VLSI Design and Simulation	
ECE 6245	Micro and Nano Fabrication Technology	
ECE 6250	ASIC Design and Testing of VLSI Circuits	
ECE 6260	Introduction to Nanoelectronics	
Electives		
15 credits in elective courses; normally, no more than two courses taken outside the Department of Electrical and Computer Engineering may be counted toward the requirements for the degree.		

Additional requirements are found on the Department of Electrical and Computer Engineering Master's Degree requirements (https://www.ece.seas.gwu.edu/masters-program-degree-requirements) webpage.