CERTIFICATE IN COMPUTER ENGINEERING

Graduates of this program gain proficiency in one of several areas, including VLSI design, computer networks, computer hardware, and software design.

Curriculum

A maximum of two 400-level course may be taken.

Code	Title	Credit Hours
Required Courses		**(6)**
Select a minimum of two courses from the following:		6
ECE 518	Computer Cyber Security	3
or ECE 543	Computer Network Security	
ECE 528	Application Software Design	3
or ECE 590	Object-Oriented Programming and Machine Learning	
ECE 585	Computer Organization and Design	3
or ECE 586	Hardware Security and Advanced Computer Architectures	
Elective Courses		**(6-8)**
Select a minimum of two courses from the following:		6-8
ECE 408	Introduction to Computer Networks	3
or ECE 545	Modern Internet Technologies	
ECE 429	Introduction to VLSI Design	3-4
or ECE 529	Advanced VLSI Systems Design	
ECE 441	Smart and Connected Embedded System Design	4
ECE 446	Advanced Logic Design	4
ECE 501	Artificial Intelligence and Edge Computing	3
ECE 503	5G Wireless Network: Architecture, New Radio, and Security	3
ECE 510	Internet of Things and Cyber Physical Systems	3
ECE 517	Modern Wireless Network Protocols and Standards	3
ECE 518	Computer Cyber Security	3
ECE 523	Fundamentals of Semiconductor Devices	3
ECE 528	Application Software Design	3
ECE 530	High Performance VLSI IC Systems	3
ECE 541	Communications Networks Performance Analysis	3
ECE 542	Design and Optimization of Computer Networks	3
ECE 543	Computer Network Security	3
ECE 544	Wireless and Mobile Networks	3
ECE 546	Wireless Network Security	3
ECE 547		3
ECE 583	High Speed Computer Arithmetic	3
ECE 584	VLSI Architecture for Signal Processing and Communication Systems	3
ECE 585	Computer Organization and Design	3
ECE 586	Hardware Security and Advanced Computer Architectures	3
ECE 587	Hardware/Software Codesign	3
ECE 588	Hardware Acceleration for Machine Learning	3
ECE 589	Computer-Aided Design of Analog IC	3
ECE 590	Object-Oriented Programming and Machine Learning	3
Total Credit Hours		**12-14**