MINOR IN COMPUTER ENGINEERING

The Minor in Computer Engineering prepares students who want to complement their background in computer science or other applied science disciplines with knowledge of computer hardware design, microcontroller software programming, and hardware-software codesign to support a well-rounded knowledge of working with computing systems.

Learning Objectives

Students successfully completing this program will be able to:

1. Solve digital circuit logic problems and implement logic on programmable devices.
2. Design software to program embedded and Internet of Things (IoT) hardware platforms.
3. Identify and explain interactions between hardware and software in computing systems.
4. Apply computer hardware architecture for general purpose and accelerator processing.
5. Prepare for jobs as computer engineers, including software architects and computer architects.

Requirements Effective Fall 2025

Students must satisfactorily complete the total credits required for the minor. Minors and interdisciplinary minors require 12 or more upper-division (300- to 400-level) credits.

Additional coursework may be required due to prerequisites.

Code	Title	Credits
ECE 102	Digital Circuit Logic	4
Select one course from the following:		4
CS 250	Computer Systems Foundations	
CS 270	Computer Organization	
ECE 251	Introduction to Microcontrollers and IoT	
Select a minimum of 15 credits from the following:		15
CS 356	Systems Security	
ECE 202	Circuit Theory Applications	
ECE 340	Electromagnetics for Computer Engineering	
ECE 445	Digital Logic Synthesis	
ECE 450	Digital System Design Laboratory	
ECE 451	Digital System Design	
ECE 452	Computer Organization and Architecture	
ECE 455	Introduction to Robot Programming/ Simulation	
ECE 495A	Independent Study [1]	
ECE 495B	Independent Study: Open Option Project [1]	
ECE 495C	Independent Study: Vertically Integrated Projects [1]	
ECE 519	Network Centric Systems	
ECE 528/CS 528	Embedded Systems and Machine Learning	
ECE 544	Silicon Photonics for Computing Systems	
ECE 554	Computer Architecture	
ECE 561/CS 561	Hardware/Software Design of Embedded Systems	
ECE 564	Semiconductor Memory	
ECE 571	VLSI System Design	
Program Total Credits:		**23**

[1] A total 3 credits of Independent Study may apply toward total degree requirements. This includes credit awarded for ECE 495A, ECE 495B, ECE 495C combined.