Semiconductor Engineering, Minor

The minor in semiconductor engineering is open to all students in the university. It is designed for those who are interested in acquiring fundamental technical knowledge to prepare for careers in the semiconductor industry, as well as to increase proficiencies in project management, product development, and entrepreneurship.

Minor Requirements

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Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, or companion courses where specified.

Students need to complete the program requirements with five courses, at least three of which are not part of their major required coursework.

Fundamental Courses

Code	Title	Hours
Complete one of the following:		4
BIOE 3210	Bioelectricity	
EECE 2150	Circuits and Signals: Biomedical Applications	
EECE 2210 and EECE 2211	Electrical Engineering and Lab for EECE 2210	
Complete one of the following:		4
EECE 2412	Fundamentals of Electronics	
EECE 2530	Fundamentals of Electromagnetics	

EECE Core Elective

Code	Title	Hours
Complete one of the following:		4
EECE 3392	Electronic Materials	
EECE 3410	Electronic Design	
EECE 4534	Microprocessor-Based Design	
EECE 4574	Wireless Communication Circuits	
EECE 4604	Integrated Circuit Devices	
EECE 4632	Hardware-Software Codesign for FPGA-Based Systems	
EECE 4646	Optics for Engineers	
EECE 5170	Introduction to Multiferroics Materials and Systems	
EECE 5606	Micro- and Nanofabrication	
EECE 5608	Magnetic Materials for Next-Generation Electronics	
EECE 5647	Nanophotonics	
EECE 5649	Design of Analog Integrated Circuits with Complementary Metal-Oxide-Semiconductor Technology	
EECE 5651	Introduction to Photonic Devices	
EECE 5698	Special Topics in Electrical and Computer Engineering	

Engineering and Science Elective

Code	Title	Hours
Complete one of the following:		4
CHME 2310	Transport Processes 1	
CHME 2320	Engineering Thermodynamics	
CHME 3312	Transport Processes 2	
CHME 3322	Chemical Thermodynamics	
CHME 4512	Chemical Engineering Process Control	
CHME 5105	Materials Characterization Techniques	
CHME 5510	Fundamentals in Process Safety Engineering	
IE 4530	Manufacturing Systems and Techniques	
IE 5617	Lean Concepts and Applications	
ME 2340	Introduction to Material Science	

ME 5600	Materials Processing and Process Selection
ME 5620	Fundamentals of Advanced Materials
PHYS 4305	Thermodynamics and Statistical Mechanics
PHYS 4623	Medical Physics
PHYS 5114	Physics and Applications of Quantum Materials
PHYS 5260	Introduction to Nanoscience and Nanotechnology
PHYS 5318	Principles of Experimental Physics
PHYS 5352	Quantum Computation and Information

Project Management, Product Development, and Entrepreneurship Elective

Code	Title	Hours
Complete one of the following:		4
ENTR 3330	Design Thinking for Startups	
GE 5010	Customer-Driven Technical Innovation for Engineers	
GE 5020	Engineering Product Design Methodology	
GE 5030	Iterative Product Prototyping for Engineers	
GE 5100	Product Development for Engineers	
IE 2310	Introduction to Industrial Engineering	
MISM 2301	Introduction to Information Systems and Digital Technologies	
MISM 2420	Foundations of Business Analysis	
MKTG 4510	New Product Development	
SCHM 2301	Supply Chain and Operations Management	
SCHM 3301	Global Supply Chain Strategy	

GPA Requirements

2.000 GPA required in the minor