MINOR: MATERIALS SCIENCE AND ENGINEERING

Student Learning Outcomes

Students graduating from this program will:

- Understand chemical, physical and engineering principles that dictates the relationship among material compositions, structures, processing, and properties.
- Analyze and apply MSE principles to design materials with the desired properties.
- Interpret materials characterization data and communicate findings effectively.

Program Requirements

A minimum grade of a C- is required for all minor and prerequisite courses.

Code	Title	Credits
Required Coursework:		
CHEM 211 & 211L	General Chemistry I and Experimental General Chemistry I	5
PHYSICS 210	General Physics I	4-5
or PHYSICS 240	Physics For Scientists and Engineers I	
MSE 300	Introduction to Materials Science	3
Elective Coursework		
Choose two elective courses from the categories below: A minimum of one MSE course, plus one additional elective.		
Additional coursework is required to meet the prerequisites required for Elective coursework.		
Materials Science & Engineering Elective		**3**
MSE 305	Quantum Materials: Nanostructures and Devices	
MSE 310	Introduction to Materials Simulation	
MSE 410	Survey of Materials Characterization	
MSE 411	Advanced Materials Characterizations	
MSE 440	Advanced Battery Materials	
SET 400	Sustainable Energy and Materials	
Additional Electives (any of the courses not taken above or any course below)		**3**
BMD-ENGR 405	Polymers in Biomedical Engineering	
CHEM 471	Introduction To Polymer Chemistry	
E&C-ENGR 440	Principles of Nanomanufacturing	
E&C-ENGR 445	Introduction to Flexible Electronics	
MEC-ENGR 403	Intro to Polymers and Soft Materials	
MEC-ENGR 406	Introduction to Biomaterials	
MEC-ENGR 419	Mechanical Behavior of Materials	
MEC-ENGR 429	Additive Manufacturing	
MEC-ENGR 444	Composite Materials	
PHYSICS 410	Thermal Physics	
PHYSICS 450	Introduction To Solid State Physics	
Total Credits		**18-19**