MATERIALS SCIENCE AND ENGINEERING MINOR

Program Director

Quinn Qiao, Professor, Department of Mechanical and Aerospace Engineering

Program Description

The Minor in Materials Science and Engineering offers undergraduate students a focused exploration into the fundamental principles and applications of materials within modern technology. This minor serves as an excellent complement to various engineering and science majors, enriching students' comprehension of the pivotal role that materials play in shaping technological advancements. Upon completion of the minor, students will possess a foundational knowledge of materials science and engineering, enhancing their prospects in fields such as aerospace, electronics, energy, manufacturing, and healthcare.

The minor program in Materials Science and Engineering consists of an 18-credit curriculum, comprising 6 core credits and 12 elective credits. All 18 credits must be taken through Syracuse University for the letter grade. Of the 18 credits, 12 credits must be at the 300-level or above. No transfer credit will be considered for the minor.

Code	Title	Credits
Required Courses		
ECS 326	Engineering Materials, Properties, and Processing	3
or CEE 326	Engineering Materials	
MAE 433	Theory of Materials	3
Select four of the following		12
BEN 412	BioMEMS, Biosensors & Biophotonics	
BEN/CEN 473	Biomanufacturing	
CEN 651	Molecular and Statistical Thermodynamics	
ECS 325	Mechanics of Solids	
or CEE 325	Mechanics of Materials	
BEN 568	Biomaterials & Medical Devices	
CEE 331	Analysis of Structures and Materials	
CEE 332	Design of Concrete Structures	
CEN 451	Molecular and Statistical Thermodynamics	
CEN 455	Materials for Energy Systems	
ELE 346	Semiconductor Devices	
MAE 525	Soft Robotics: Materials, Mechanics, and Machines	
MAE 536	Composite Materials	
MAE 555	Fundamentals of Nano-Science & Nano-Engineering	
CHE 411	Inorganic Chemistry	
CHE 422	Inorganic Laboratory Technique	
PHY 314	Quantum Computing Demystified	
MAT 581	Numerical Methods with Programming	
Total Credits		**18**