

Materials Science (MSEN)

Julia Kohanek
Director
479-575-7193
jkohanek@uark.edu (%E2%80%8Bjkohanek@uark.edu)

Hours for Minor: 15-17

Delivery: On-Campus

Program Code: MSEN

The Materials Science minor is an interdisciplinary program that provides students with foundational knowledge and hands-on experience, including access to cleanroom fabrication to develop skills to design and build materials for next-generation technologies. The Materials Science minor is designed to be accessible to students majoring in engineering, physics, or chemistry and biochemistry. It is open to all students who have the necessary prerequisites to enroll in the courses that constitute the minor.

Requirements for the Materials Science Minor

Students wishing to participate in the Materials Science minor must declare participation formally with the Materials Science program.

Introduction to Materials (choose 1)	3-4
BMEG 36304 Biomaterials	
CHEG 37103 Chemical Engineering Materials Technology	
CHEM 41203 Advanced Inorganic Chemistry I	
MEEG 23003 Introduction to Materials	
PHYS 47103 Solid State Physics	
Thermodynamics (choose 1)	3-4
CHEG 23103 Thermodynamics of Single-Component Systems	
CHEM 34603 Elements of Physical Chemistry	
CHEM 35204 Physical Chemistry II	
MEEG 24003 Thermodynamics	
PHYS 43303 Thermal Physics	
Structure and Properties of Materials	3
MSEN 43103 Structure and Properties of Materials	
Materials Processing	3
MSEN 47303 Materials Processing	
Materials Science Elective (choose 1)	3
BMEG 44103 Tissue Engineering	
BMEG 49703 Regenerative Medicine	
CHEM 42803 Energy Conversion and Storage	
MEEG 30103 Mechanics of Materials	
MEEG 40203 Composite Materials: Analysis and Design	
PHYS 32103 Electronics in Experimental Physics	
PHYS 47703 Introduction to Optical Properties of Materials	
Total Hours	15-17

Below are example coursework plans for students from different majors. Students also have the flexibility to design their own programs according to the stated requirements above.

Example coursework for a student in Chemical Engineering

CHEG 37103	Chemical Engineering Materials Technology	3
CHEG 23103	Thermodynamics of Single-Component Systems	3
MSEN 43103	Structure and Properties of Materials	3
MSEN 47303	Materials Processing	3
CHEM 42803	Energy Conversion and Storage	3
Total Hours		15

Example coursework for a student in Chemistry

CHEM 41203	Advanced Inorganic Chemistry I	3
CHEM 34603	Elements of Physical Chemistry	4
& CHEM 34601	and Elements of Physical Chemistry Laboratory	
MSEN 43103	Structure and Properties of Materials	3
MSEN 47303	Materials Processing	3
CHEM 42803	Energy Conversion and Storage	3
Total Hours		16

Example coursework for a student in Mechanical Engineering

MEEG 23003	Introduction to Materials	3
MEEG 24003	Thermodynamics	3
MSEN 43103	Structure and Properties of Materials	3
MSEN 47303	Materials Processing	3
MEEG 30103	Mechanics of Materials	3
Total Hours		15

Example coursework for a student in Physics

PHYS 47103	Solid State Physics	3
PHYS 43303	Thermal Physics	3
MSEN 43103	Structure and Properties of Materials	3
MSEN 47303	Materials Processing	3
PHYS 47703	Introduction to Optical Properties of Materials	3
Total Hours		15