

Materials Science and Engineering (Minor)

The Materials Science and Engineering (MSE) Minor is available to students from any major and is particularly useful for students in engineering, chemistry, physics, and textiles by providing a foundational understanding of materials science and engineering principles. Students gain knowledge in the relationships between structure, properties, processing, and performance for a wide range of materials, including metals, ceramics, polymers, composites, and electronic materials. This minor enhances career opportunities in materials-related industries and prepares students for graduate studies in MSE.

To complete the MSE minor, students must earn a minimum of 15 credit hours, including 9 credits of required courses and at least 6 credits of electives. A grade of C or better is required in MSE 200 or MSE 201. A minimum of 12 credits must be courses that start with the MSE prefix and a cumulative GPA of 2.0 must be maintained in the Minor courses.

Admission

To apply for the MSE Minor, a minimum overall GPA of 2.0 is required.

Application for admission to any University minor program is now available via MyPack Portal. Admission will be based on the student's academic record, and in most cases no longer requires departmental review. Go to Add a Minor (<https://studentservices.ncsu.edu/your-degree/coda-home/add-a-minor/>) to apply. The minor must be completed no later than the semester in which the student expects to graduate from their degree program.

Contact Person

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Academic Advisor

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MSE Website (<https://mse.ncsu.edu/mse-minor/>)

Effective Date: 1/2013

SIS Code: 14MTM

Plan Requirements

The Materials Science and Engineering Minor includes a three-hour introductory course, six hours of required courses and six hours of electives selected from a list of courses covering a wide variety of materials science and engineering topics. To apply for the MSE Minor, a minimum overall GPA of 2.0 is required. A grade of C or better is required in MSE 200 Mechanical Properties of Structural Materials or MSE 201 Structure and Properties of Engineering Materials, and a minimum cumulative GPA of 2.0 must be maintained in the Minor courses.

Code	Title	Hours
Required Courses		
MSE 201	Structure and Properties of Engineering Materials	3
or MSE 200	Mechanical Properties of Structural Materials	
MSE 300	Structure of Materials at the Nanoscale	3
MSE 301	Introduction to Thermodynamics of Materials	3

or CHE 316 Thermodynamics of Chemical and Phase Equilibria

Elective Courses

Select six credits of the following: 6

MSE 255	Experimental Methods for Structural Analysis of Materials
MSE 320	Introduction to Defects in Solids
MSE 335	Experimental Methods for Analysis of Material Properties
MSE 355	Electrical, Magnetic and Optical Properties of Materials
MSE 360	Kinetic Processes in Materials
MSE 370	Microstructure of Inorganic Materials
MSE 380	Microstructure of Organic Materials
MSE/NE 409	Nuclear Materials
MSE 455	Polymer Technology and Engineering
MSE 460	Microelectronic Materials
MSE 465	Introduction to Nanomaterials
MSE/ECE 489	Solid State Solar and Thermal Energy Harvesting
MSE 490	Special Topics in Materials Science and Engineering

Other engineering electives with departmental approval. Contact the MSE academic advisor for options.

Total Hours 15