

# MATERIALS SCIENCE & ENGINEERING - MINOR

Materials science and engineering is an interdisciplinary field that lies at the interface of chemistry, engineering and physics. The minor is for undergraduate students who are majoring in the natural sciences and engineering and who have an interest in materials science and engineering.

## Requirements

Requirements for the minor are met by completing the required courses for 6 credit hours and 12 technical elective credit hours. Visit the Materials Science & Engineering webpage (<https://www.colorado.edu/mse/academics/materials-science-engineering-undergraduate-minor/>) for more information and a list of approved technical electives (<https://www.colorado.edu/mse/academics/undergraduate-minor/mse-minor-technical-electives/>). At least 12 of the 18 credit hours must be upper-division (3000 or higher level). At least 3 credit hours beyond the required courses must be taken in engineering courses (9 credits total). 5000-level courses are allowed where undergraduate students are eligible to enroll. Prior coursework may be transferred from other institutions with approval.

A GPA of 2.000 or better is required in the courses that are used to satisfy the requirements for this minor. Each individual course that is counted towards these degree requirements must be passed with a D- or better. Note, however, that a C- or better is required in all prerequisite courses to move on to a subsequent course.

Completion of 18 credit hours is required for the minor, distributed as follows.

Code	Title	Credit Hours
<b>Required Course</b>		
MSEN 2000	Materials in Technology <sup>1</sup>	3
<b>Fundamentals of Materials Science</b>		
Select one of the following:		
ASEN 1022	Materials Science for Aerospace Engineers	3
or MCEN 2024	Materials Science	
or GEEN 3024	Materials Science for Engineers	
or CHEN 4440	Chemical Engineering Materials	
<b>Technical Electives</b>		<b>12</b>
<b>Total Credit Hours</b>		<b>18</b>

<sup>1</sup> Open to non-CEAS students.

## Learning Outcomes

Upon program completion, students will be able to:

- Identify the different classes of materials, the chemical properties of different materials, and the structure-function relationship of materials.
- Solve complex engineering problems that involve materials by applying principles of engineering, science and mathematics.

- Apply materials science and engineering principles to solve technical challenges in society.
- Work in a team environment to solve complex engineering problems that require materials solutions.
- Recognize ethical and professional responsibilities when designing materials to address solutions that impact public health, safety and welfare.