

# MATERIALS SCIENCE AND ENGINEERING, MINOR

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The Materials Science and Engineering (MSE) program reflects the explosive growth of interest in the nano and bio sectors of engineering science and technology. MSE prepares students to use fundamental scientific principles to synthesize, manipulate, design and characterize the structural and functional properties of advanced engineering materials. The program offers students advantages seldom found in other MSE programs: the opportunity to tailor the curriculum to their own interests, guaranteed research experience and an excellent student-faculty ratio.

## SEAS Second Major or Minor Option

Students interested in a second major (College students only) or minor with SEAS are required to meet with the Undergraduate Curriculum Chair from the major/minor department you wish to declare to discuss requirements and obtain approval on the Second Major or Minor form. The approved form must be returned to the SEAS Research and Academic Services Office, 109 Towne Building.

**For more information:** <http://www.seas.upenn.edu/undergraduate/degrees/minors.php>

## Materials Science and Engineering Minor (CSCI)

Code	Title	Course Units
MSE 220	Introduction to Materials Science and Engineering	1
MSE 221	Quantum Physics of Materials	1
MSE 215	Introduction to Functional Materials: From Macro to Nanoscale	1
MSE 260	Energetics of Macro and Nano-scale Materials	1
MSE 330	Self-Assembly of Soft Materials	1
MSE 440	Phase Transformations	1
Total Course Units		6

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The degree and major requirements displayed are intended as a guide for students entering in the Fall of 2020 and later. Students should consult with their academic program regarding final certifications and requirements for graduation.

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