Materials Science and Technology Minor

Jayson Paulose, Program Director

Materials scientists study the connections between the fundamental constituents of a material (atoms, molecules, and their assemblies) and its physical properties. They use these relationships to deepen our understanding of natural materials and to invent new materials with desirable properties for modern technologies. A minor in Materials Science and Technology will give students the quantitative skills to describe and characterize the properties of materials, and connect these properties to their suitability for various applications. Since materials innovation is crucial for practically any technological realm—semiconductors, batteries, plastics, biotech, building materials, sports apparel, and more—a minor in Materials Science and Technology can be a valuable complement to a wide range of major fields.

Materials Science and Technology Minor Requirements

Courses used to fulfill the minor requirements must be taken for a letter grade of C- or better or a mark of Pass (P or P*).

Code	Title	Credits
Chemistry and Physics Foundation		
CH 224H	Advanced General Chemistry I	4
or CH 221Z	General Chemistry I	
PHYS 251	Foundations of Physics I [1]	4
PHYS 252	Foundations of Physics I [1]	4
PHYS 253	Foundations of Physics I [1]	4
Fundamentals of Materials Science		
MSTC 231	Fundamentals of Materials in Technology I	4
MSTC 232	Fundamentals of Materials in Technology II	4
Upper-division statistical/quantum mechanics		
Select one course from any of the following sequences:		4
PHYS 351–353	Foundations of Physics II	
CH 411–413	Physical Chemistry	
CH 431–433	Inorganic Chemistry	
Advanced Materials Science and Technology electives		
Select two of the following:		8
MSTC 431	Thermal Physics of Advanced Materials	
MSTC 432	Kinetics and Transport in Advanced Materials	
MSTC/PHYS 441M	Electronic, Optical and Magnetic Properties of Materials I	
MSTC/PHYS 442M	Electronic, Optical and Magnetic Properties of Materials II	
Other materials-related courses at 400 level or above from natural sciences, applied MS programs, or other technical fields may be chosen in consultation with the MSTC advisor to fulfill this requirement		
Total Credits		**36**

[1] Students may petition to use courses from the PHYS 201/PHYS 202/PHYS 203 sequence to satisfy the Foundations of Physics requirement. However, students will need to satisfy calculus prerequisites in order to enroll in the upper-division courses for the minor.

Additional Requirements

The twelve upper-division credits must be completed in residence at the University of Oregon.