

The Minor in Materials Science and Engineering

Materials Science and Engineering (MSE) is a field that couples basic and applied studies in physics, chemistry and mechanics on the atomistic and nanometer scales with macroscopic materials' properties. Materials science is frequently an important enabler for many other scientific and engineering disciplines. For instance, advances in performance for future subsonic and hypersonic aircraft require new materials with greater durability at high temperatures and high strength-to-weight ratios. Advances in communication equipment with the introduction of fiber optic cables are brought about through the utilization of ceramic fibers which minimize attenuation of light signals and transmit much more information than is possible with electrically conducting wires. Thus, materials science and engineering advances enable new technologies.

The Goal of the Minor is to provide instruction on how the processing, structure, and properties of materials affect and complement your Major field of study.

Requirements: 5 MSE courses constitute a Minor.

0. You must have a Minor Advisor who can help you select the best courses & sequencing

1. You must take MSE 209 (F/S*) Intro to MSE

2. You must pick 2 of the following 3 core materials subjects

MSE 305 (F) Thermodynamics and Kinetics of Materials

MSE 306 (S) Physical Metallurgy: Structure Property Relationships

MSE 367 (F) Electronic, Magnetic & Optical Properties of Materials

3. You must pick 2 more courses to complete a 5 course Minor from the following list:

MSE 301 (S) Corrosion

MSE 304 Polymers

MSE 305 (F) Thermodynamics and Kinetics of Materials

MSE 306 (S) Physical Metallurgy: Structure Property Relationships

MSE 367 (F) Electronic, Magnetic & Optical Properties of Materials

MSE 512 Biomaterials

MSE 532 (F) Mechanical Behavior of Materials

MSE 524 (S) Modeling of Materials

MSE 567 (F) Advanced Electrical Magnetic & Optical Properties

* (F) or (S) indicates normal semester Fall/Spring in which the course is offered

MSE is a research intensive discipline and students are encouraged to become involved first hand through i) independent study research projects MSE 451 or 452, ii) senior thesis projects, iii) undergrad research internships (\$\$\$) during the academic year or summer, and iv) graduate school. Faculty throughout the dept can advise your research of various materials topics.

There are also other materials intensive courses taught in the School of Engineering and Applied Science

ECE 303 Solid State Devices

CE 323 Mechanical Properties and Behavior of Materials

CE 363 Mechanical Properties and Behavior of Materials Lab

MAE 352 Engineering Materials

ECE 564 Microelectronic Fabrication

Interested in learning more about MSE and the Minor? Please contact:

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