MATERIALS SCIENCE & ENGINEERING MINOR

for the Undergraduate Minor in Materials Science & Engineering

Materials are the basis for all engineering and also are the basis for much of the research in various areas of science. The Minor in Materials Science and Engineering is designed to give students in other areas of engineering and science both a broad view of all materials as well as several courses in a particular area of materials, knowledge that will be of value whether the student pursues a career in industry, government, or academia.

The courses, listed below, have been selected to give an undergraduate student both a strong background in all types of materials as well as more detailed knowledge of a particular area of materials (e.g., ceramics, metals, polymers, electronic materials or biomaterials).

Minor Requirements:

Code	Title	Hours
Core Course Work		
MSE 280	Engineering Materials	3
MSE 401	Thermodynamics of Materials (Other thermodynamics courses may be substituted upon petition.)	3
One additional course chosen from an approved list below:		3
MSE 304	Electronic Properties of Matls	
MSE 402	Kinetic Processes in Materials	
MSE 403	Synthesis of Materials	
MSE 405	Microstructure Determination	
MSE 406	Thermal-Mech Behavior of Matls	
Nine additional hours in advanced courses selected from:		9
MSE 404	Laboratory Studies in Materials Science and Engineering	1.5
MSE 420	Ceramic Materials & Properties	3
MSE 421	Ceramic Processing	3 or 4
MSE 422	Electrical Ceramics	3
MSE 440	Mechanical Behavior of Metals	3
MSE 441	Metals Processing	3
MSE 443	Design of Engineering Alloys	3
MSE 450	Polymer Science & Engineering	3 or 4
MSE 453	Plastics Engineering	3
MSE 455	Macromolecular Solids	3
MSE 456	Mechanics of Composites	3
MSE 457	Polymer Chemistry	3 or 4
MSE 458	Polymer Physics	3 or 4
MSE 460	Electronic Materials I	3
MSE 461	Electronic Materials II	3
MSE 466	Electrochemical Energy Conversion	3
MSE 470	Design and Use of Biomaterials	3
MSE 473	Biomolecular Materials Science	3
MSE 474	Biomaterials and Nanomedicine	3
MSE 480	Surfaces and Colloids	3 or 4
MSE 481	Electron Microscopy	3 or 4
MSE 485	Atomic Scale Simulations	3 or 4
MSE 487	Materials for Nanotechnology	3 or 4
MSE 488	Optical Materials	3 or 4
MSE 489	Matl Select for Sustainability	3 or 4
ECE 444	IC Device Theory & Fabrication	4

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The Grainger College of Engineering (https://grainger.illinois.edu/) Materials Science & Engineering Website

For more information regarding the Materials Science and Engineering minor, visit the Materials Science and Engineering minor Web site (https://matse.illinois.edu/academics/undergraduate-programs/matse-minor/), contact the MatSE Department Office (201 MSEB, 217-333-1441, email (http://catalog.illinois.edu/undergraduate/engineering/minors/materials-science-engineering/matse@illinois.edu)), or visit the Office of the Associate Dean for Undergraduate Programs, 206 Engineering Hall.