

*Courses in italics are prerequisites*

**Courses in bold are co-requisites**

\*A grade of C or better is required before registration is permitted in upper-division courses.

See course catalog for complete degree requirements and additional information at [uidaho.edu/registrar/classes/catalogs](http://uidaho.edu/registrar/classes/catalogs).

Last updated 6/25/20

FRESHMAN			FALL			SPRING		
MSE 101	Introduction to Metallurgy and Materials Science	2	*CHEM 112/112L	General Chemistry II with Lab <i>CHEM 111</i>	5			
*CHEM 111/111L	General Chemistry I <i>C or better in MATH 170 or sufficient test scores</i>	4	MATH 175	Calculus II <i>C or better in MATH 170</i>	4			
ENGL 102	Writing and Rhetoric <i>English 101 or sufficient test scores</i>	3	PHYS 211/211L	Engineering Physics I with Lab <b>MATH 170 or MATH 170</b>	4			
ELECTIVE	Humanities/Social Science Elective	3	PHIL 103	Introduction to Ethics	3			
*MATH 170	Calculus I <i>C or better in MATH 143 and 144 or sufficient test scores</i>	4						
	<b>Total Credits</b>	<b>16</b>		<b>Total Credits</b>	<b>16</b>			

SOPHOMORE			FALL			SPRING		
MSE 201	Elements of Materials Science <i>CHEM 111/111L</i>	3	MSE 308	Thermodynamics of Materials <i>MSE 201, CHEM 112/112L, MATH 310</i>	3			
*ENGR 210	Engineering Statics <i>MATH 170</i>	3	*ENGR 335	Engineering Fluid Mechanics <i>ENGR 210, MATH 275</i>	3			
*MATH 275	Calculus III <i>MATH 175</i>	3	*MATH 310	Ordinary Differential Equations <i>MATH 175 (MATH 275 recommended)</i>	3			
*PHYS 212/212L	Engineering Physics II with Lab <i>PHYS 211/211L; MATH 175 or MATH 175</i>	4	STAT 301	Probability & Statistics <i>MATH 175</i>	3			
ELECTIVE	ECON 201 or 202	3	ELECTIVE	CHE 223, CHEM 275, CHEM 277, CHEM 306, or ENGR 428	3			
	<b>Total Credits</b>	<b>16</b>		<b>Total Credits</b>	<b>15</b>			

JUNIOR			FALL			SPRING		
MSE 313	Physical Metallurgy <i>MSE 201</i>	3	MSE 313L	Physical Metallurgy Lab <b>MSE 313</b>	1			
MSE 340	Transport and Rate Processes I <i>ENGR 335, MATH 310, CHE 223 or MSE 201</i>	4	MSE 412	Mechanical Behavior of Materials <i>MSE 201, junior standing or permission</i>	3			
MSE 423	Corrosion <i>CHEM 112/112L, MSE 201 or CHE 223 or permission</i>	3	MSE 413	Phase Transformation and Kinetics <i>CHEM 112/112L</i>	3			
CHEM 305/307	Physical Chemistry with Lab <i>CHEM 112/112L, MATH 275, PHYS 212/213</i>	4	ENGR 240	Introduction to Electrical Circuits <i>PHYS 211/211L, MATH 175</i>	3			
ENGR 350	Engineering Mechanics of Materials <i>ENGR 210, MATH 175, MATH 310</i>	3	ENGL 317	Technical Writing <i>ENGL 102, Junior standing or permission</i>	3			
	<b>Total Credits</b>	<b>17</b>	ELECTIVE	Humanities/Social Science/AMST Elective	3			
				<b>Total Credits</b>	<b>16</b>			

SENIOR			FALL			SPRING		
MSE 417	Instrumental Analysis <i>Junior standing</i>	3	MSE 432	Fundamentals of Thin Film Fabrication <i>Senior standing or permission</i>	3			
MSE 434	Fundamentals of Polymeric Materials <i>CHEM 111/111L, CHEM 112/112L</i>	3	MSE 454	Process Analysis & Design II <i>MSE 453</i>	3			
MSE 453	Process Analysis & Design I <i>MSE 201, MSE 308, MSE 313, MSE 340, MSE 412</i>	3	MSE 456	Metallic Materials <i>MSE 313 or permission</i>	3			
MSE 427	Ceramics Materials <i>MSE 313 recommended</i>	3	MSE 464	Materials Physics and Engineering <i>Senior standing or permission</i>	3			
ELECTIVE	MSE/CHE Elective 300 or higher	3	ELECTIVE	Technical Elective 300 or higher	3			
	<b>Total Credits</b>	<b>15</b>		<b>Total Credits</b>	<b>15</b>			



University of Idaho  
College of Engineering



# MATERIALS SCIENCE AND ENGINEERING

Design, select, test or create new materials for improved application to make communication, transportation, recreation, daily conveniences and a healthful environment possible.

## ABOUT YOUR DEGREE PATH

Materials Science and Engineering majors build a strong foundation in chemistry, math and physics, while developing individual interests through a selection of technical electives.

Upper-division courses teach you how to apply the behavior of materials to engineering design, and prepare you to create your own solutions to many of the world's materials and processing challenges.

Our graduates are equipped to begin competitive and productive careers and understand the importance of working responsibly, acting ethically and pursuing continued professional growth.

## MATCH YOUR INTERESTS

- Nuclear Materials
- Energy Storage Devices
- Structural and Advanced Ceramics
- High Temperature Mechanical Behavior
- Ferrous and Non-Ferrous Alloy Metallurgy
- Manufacturing Methods
- Renewable Energy Materials
- Materials Modeling/ Computational Materials
- Corrosion
- Polymeric Materials
- Electronic Materials

## YOUR DEGREE IS ACCREDITED

*Our undergraduate Materials Science and Engineering program is accredited by the Engineering Accreditation Commission of ABET, [www.abet.org](http://www.abet.org).*

DEPARTMENT OF CHEMICAL & MATERIALS ENGINEERING

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[uidaho.edu/engr/cme](http://uidaho.edu/engr/cme)