MATERIALS SCIENCE AND ENGINEERING

UNLOCKING ELEMENTS OF THE FUTURE

What can you do as a Materials Scientist?

As a materials scientist you will create products to improve lives. Your research could discover a new way to fight cancer, create a faster computer chip, or design a less abrasive airbag for your car.

Materials Science and Engineering (MSE) is the technology behind the materials that make communication, transportation, recreation, daily conveniences and a healthful environment possible. The worldwide effort to develop new materials with improved properties for structural, electronic and magnetic applications has been met by new courses and research emphases by the faculty in the materials and processing area. As a materials scientist you could make new discoveries in the fields of electronic and magnetic materials, ceramics, and aerospace materials.

Undergraduate Program

The department's educational mission is to produce graduates who are equipped to begin competitive and productive careers in their engineering professions; who can define and solve engineering problems to meet desired needs and produce societal benefits. Idaho's MSE program teaches you to understand the importance of working responsibly, acting ethically and pursuing continued professional growth.

The MSE Department at the University of Idaho is the only institution in the state of Idaho, which offers a full gamut of degrees in this discipline from BS to MS and Ph.D.

University of Idaho
A LEGACY OF LEADING

College of Engineering
Department of Chemical & Materials Engineering
208.885.4052 or 88-88-UIDAHO ext. 4052
mse@uidaho.edu or mbaker@uidaho.edu

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Academic Plan for 2012/13

FRESHMAN - FALL			FRESHMAN - SPRING		
CHEM 111*	Principles of Chemistry I	4	CHEM 112*	Principles of Chemistry II	5
ENGL 102	College Writing and Rhetoric	3	CS 112	Or any Computer Science Elective	3
MATH 170	Analytic Geometry & Calculus I	4	MATH 175	Analytic Geometry & Calculus II	4
MSE 101	Introduction to Metallurgy & Materials Science	2	PHYS 211*	Engineering Physics I (no lab)	3
ISEM 101	Integrated Seminar w/International Component	3	HUM/SS	Humanities/Social Science Elective	3
	Total Credits	**16**		**Total Credits**	**18**
SOPHOMORE - FALL			**SOPHOMORE- SPRING**		
PHIL 103	Ethics (Humanities)	3	ECON 201, 202 or 272	Economics Elective	3-4
ENGR 210*	Engineering Statics	3	ENGR 335*	Engineering Fluid Mechanics	3
MATH 275*	Analytical Geometry & Calculus III	3	ENGR 240	Introduction to Electrical Circuits	3
MSE 201*	Elements of Materials Science	3	MATH 310*	Ordinary Differential Equations	3
PHYS 212/Lab*	Engineering Physics II (with lab)	4	STAT 301	Probability and Statistics	3
	Total Credits	**16**		**Total Credits**	**15-16**
A grade of C or better is required in these courses before registration is permitted in upper division material science engineering courses					
JUNIOR - FALL			**JUNIOR - SPRING**		
CHEM 305/307	Physical Chemistry (with Lab)	4	ENGL 317	Technical Writing (Communication)	3
MSE 313	Physical Metallurgy	4	MSE 308	Thermodynamics of Materials	3
ENGR 350	Engineering Mechanics of Materials	3	MSE 413	Phase Equilibria in Materials	3
MSE 423	Corrosion	3	MSE 412	Mechanical Behavior of Materials	3
MSE 340/ ChE340	Transport and Rate Processes I	4	HUM/SS	Upper Division Humanities or Social Science Elective	3
	Total Credits	**18**		**Total Credits**	**15**
SENIOR - FALL			**SENIOR- SPRING**		
MSE 417	Instrumental Analysis	3	MSE 432	Fundamentals of Thin Film Fabrication	3
MSE 434	Fundamentals of Polymeric Materials	3	MSE 464	Materials Physics and Engineering	3
MSE 453/ ChE 453	Process Analysis and Design I	3	MSE 454 / ChE 454	Process Analysis and Design II (Capstone Core)	3
MSE 427	Ceramic Materials	3	MSE 456	Metallic Materials	3
ELECTIVE	Upper Division ChE/MSE Technical Elective	3	ELECTIVE	Upper Division Technical Elective	3
	Total Credits	**15**		**Total Credits**	**15**

- See course catalog for complete degree requirements and additional information.