

MATERIALS SCIENCE AND ENGINEERING (0750)

Teaching Schedule 2016-2017

<u>Course No.</u>	<u>Title</u>	<u>Fall</u>	<u>Winter</u>	<u>Spring</u>
GT 106	Freshman Design and Communications			
298/398	IDEA			
101	Modern Materials			
190	MS&E Freshman Projects	TTh 2:00 Dravid		
201	Principles of the Properties of Materials	TTh 9:30 Emery/Wolverton	TTh 9:30 Snyder/Emery	TTh 9:30 Emery/Rondinelli
301	Chemical Aspects of Engineering Materials	MWF 12:00 Chung		MWF 12:00 Joester
314	Thermodynamics of Materials	MTWF 3:00 Lauhon		
315	Phase Equilibria and Diffusion in Materials		MTWF 2:00 Wolverton	
316-1	Microstructural Dynamics			MTWF 1:00 Shull
316-2	Microstructural Dynamics	MWThF 1:00 Joester		
318	Materials Selection		MWF 11:00 Carr	
331	Soft materials		MWF 3:00 Huang	
332	Mechanical Behavior of Solids	MWF 10:00 Shull/Emery		
333	Composites			
336	Chemical Synthesis of Materials			TTh 2:00 Stupp
337	Conducting Polymers	MWF 11:00 Huang		
340	Ceramic Processing		MWF 2:00 Barnett	
341	Intro to Modern Ceramics			
351-1	Intro Physics of Materials		MTWF 1:00 Snyder	
351-2	Intro Physics of Materials			MWF 10:00 Wessels
355	Electronic Materials			
360	Electron Microscopy	TTh 12:30 Marks		TTh 12:30 Dravid
361	Crystallography & Diffraction		MWF 12:00 Bedzyk/Emery	
362	Point, Line & Planar Imperfections			
370	BioMaterials			

371	Biomaterials: Hierarchical Architecture and Function			TTh 12:30 Joester	
372	Engineering Strategies in Tissue Engineering and Regenerative Medicine				MWF 12:00 Shah
376	Nanomaterials				
380	Intro to Surface Science & Spectroscopy			MWF 9:00 Guisinger	
381	Energy Materials		TTh 11:00 Dunand		
382	Fuel Cells				TTh 11:00 Barnett
390	Materials Design				MWF 11:00 Olson/Rondinelli
391	Process Design		MWF 3:00 Chung		
394	Honors Project		TBA	TBA	TBA
395	Magnetic Properties of Materials				
395	Mechanical Modeling				
395	Special Topics: Engineering Strategies in Tissue Engineering & Regenerative Medicine				
395	Special Topics: Electronic and Thermal Properties of Materials				MWF 3:00 Snyder
396	Senior Project MS&E		W 2:00 Stair	W 2:00 Stair	W 2:00 Stair
398	Introduction to Plasma Sci. and Processing Tech.				
399	Special Projects MS&E		TBA	TBA	TBA
401	Chemical and Statistical Thermodynamics of Materials		MWF 9:00 Luijten		
404	Imperfections in Materials			MWF 1:00 Seidman	
405	Physics of Solids				MTWF 1:00 Hersam
406	Symmetry and Mechanical Properties of Materials				MWF 2:00 Dunand/Emery

408	Phase Transformations in Materials			MTWF 10:00 Voorhees	
411	Phase Transformations in Crystalline Materials				TTh 9:30 Voorhees
415	Fundamentals of Thin Film Materials		MWF 12:00 Barnett		
416	Kinetics				MWF 8:30-9:50 Seidman
434	Fracture of Brittle Solids				
435	High Temperature Materials			TTh 12:30 Dunand	
445	High Polymer Science		TTh 2:00 Olvera		
451	Physics of Materials		MTWF 1:00 Hersam		
452	Special Topics in Solid State Physics of Materials: Optoelectronic Materials		TTh 9:30 Wessels		
455	Physcis of Nanostructures				
456	Functional Metamaterials				
458	Computational Materials Science			MWF 3:00 Wolverton	
460	Electron Microscopy			TTh 2:00 (MatSci only) Marks	
461	Diffraction Methods in Materials Science				TTh 2:00 Bedzyk
465	Advanced Electron Microscopy and Diffraction				TTh 11:00 Marks
466	Analytical Electron Microscopy				
495	Biom mineralization				
495	Solar Energy Conversion				TTh 9:30 Chang
495	Mechanics of the Cell				
495	Mechanics of Soft Matter				
495	Solid State Electrochemistry for Energy Storage and Conversion			TTh 11:00 Haile	
498	Statistical Mechanics				
499	Projects		TBA	TBA	TBA

510	Special Topics Computational				
590	Research		TBA	TBA	TBA

Some Non-MSE Courses of Interest (not an exhaustive list)

CIV_ENV 430	Cohesive Fracture and Scaling			MWF 4:00-5:50 Bazant	
CIV_ENV 415	Theory of Elasticity			Brinson	
ES_APPM 311-1	Methods in Applied Math	20	MWF 12:00 Olmstead		
ES_APPM 311-1	Methods in Applied Math	21	MWF 11:00 Olmstead		
ES_APPM 495	Modeling of Soft Materials				
ES_APPM 495	Intro to Statistical Mechanics				
Chem 360	Nanopatterning			TTH 1:00 Odom	
Chem 407	Materials and Nanochemistry		Tu-Th 11:00-12:20 Schaller		
Chem_Eng 361	Introduction to Polymers		MTWF 10:00 Torkelson		
Chem_Eng 451	Applied Molecular Modeling				
Chem_Eng 462	Viscoelasticity and Flow in Polymer Systems				
Chem_Eng 475	Cell-Material Interactions			MW 4:00-5:30 Shea	
Chem_Eng 478	Advances in Biotechnology				W 12-2, F 1-2 Shea
BME 343	Biomaterials and Medical Devices				
ME 445	Micromanufacturing		TuTh 9:30-11 Cao		
ME 456	Mechanics of Advanced Materials				
ME 495	Nanoengineered Materials for Mekanobiology				
ME 495	Nuvention: Medical Innovation		TBA 6:00-9:00 PM Marasco	Note: Interested students can contact Kevin Henderson (current MSE grad student) for advice	
ME 381	Intro to Micro-electro-mechanical systems		MWF 11:00 Espinosa		
ME 382	Experiments in Micro- and nano-science and Engineering				TuTh 12:30-1:50 Espinosa

requirement for Ph.D. Program
satisfies 400-level (graduate) MSE requirement

