

## MATERIALS SCIENCE AND ENGINEERING (0750)

### Teaching Schedule 2011-2012 - revised 3/4/11

<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			MWF 2:00 Mason
190	MS&E Freshman Projects	TTH 2:00 Dravid		
201	Principles of the Properties of Materials	MWF 9:00 Wolverton	MTWF 9:00 Chung	MTWF 9:00 Chang
301	Chemical Aspects of Engineering Materials	MWF 1:00 Joester		MWF 11:00 Huang
314	Thermodynamics of Materials	MTWF 10:00 Luijten		
315	Phase Equilibria and Diffusion in Materials		MTWF 2:00 Mason	
316-1	Microstructural Dynamics			MTWF 1:00 Voorhees
316-2	Microstructural Dynamics	MWThF 1:00 Shull		
318	Materials Selection		MWF 12:00 Shull	
331	Soft materials		MWF 3:00 Huang	
332	Mechanical Behavior of Solids	MWF 10:00 Faber		
333	Composites			
336	Chemical Synthesis of Materials			TTH 11:00 Stupp
337	Conducting Polymers	MWF 12:00 Huang		
340	Ceramic Processing			
341	Intro to Modern Ceramics	TTH 2:00 Mason		
351-1	Intro Physics of Materials		MTWF 1:00 Lauhon	
351-2	Intro Physics of Materials			TTH 11-12:20 Barnett
355	Electronic Materials			MWF 10:00 Wessels
360	Electron Microscopy			TTh 12:30 (MatSci Only) Marks
361	Crystallography & Diffraction		MWF 11:00 Bedzyk	

362	Point, Line & Planar Imperfections				
370	BioMaterials				
371	Special Topics: Biomineralization			TTh 9:30 Joester	
376	Nanomaterials				
380	Intro to Surface Science & Spectroscopy				
381	Energy Materials				TTh 2:00-3:20 Dunand
382	Fuel Cells			TTh 2:00 Barnett	
390	Materials Design				MWF 11:00 Olson
391	Process Design		MTWF 3:00 Chung		
394	Honors Project		TBA	TBA	TBA
395	Special Topics: Biomaterials				MWF 12:00 Shah
396	Senior Project MS&E		W 2:00 Stair	W 2:00 Stair	W 12:00 Stair
398	Introduction to Plasma Sci. and Processing Tech.				
399	Special Projects MS&E		TBA	TBA	TBA
401	Chemical and Statistical Thermodynamics of Materials		TTH 9:30-10:50 Barnett		
404	Imperfections in Materials			MWF 10:00 Marks	
405	Physics of Solids				MTWF 1:00 Hersam
406	Symmetry and Mechanical Properties of Materials				MWF 10:00 Faber
408	Phase Transformations in Materials			MWF 2:00 Voorhees	
411	Phase Transformations in Crystalline Materials		MWF 2:00 Voorhees		
415	Fundamentals of Thin Film Materials				
416	Kinetics				TTh 2:00-3:20 Seidman
434	Fracture of Brittle Solids				
435	High Temperature Materials				
445	High Polymer Science			MWF 4:00 Olvera	

451	Physics of Materials		MTWF 1:00 Hersam		
452	Special Topics in Solid State Physics of Materials: Optoelectronic Materials			TTh 1:00 Wessels	
455	Physics of Nanostructures		TTh 11:00 Wessels		
456	Functional Metamaterials				TTh 9:30 Lauhon
458	Computational Materials Science			MWF 1:00 Wolverton	
460	Electron Microscopy			MWF 3:00 (MatSci only) Marks	
461	Diffraction Methods in Materials Science				
465	Advanced Electron Microscopy and Diffraction				
466	Analytical Electron Microscopy				TTh 11:00 Dravid
495	Biomaterialization				TTh 9:30 Joester
495	Mechanics of the Cell		MWF 11:00 Rim		
498				TTh 9:30 Chang	
499	Projects		TBA	TBA	TBA
510	Special Topics Computational				
519	RCR Training				TTh 4:00 Shull
590	Research		TBA	TBA	TBA

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

<b>CIV_ENV 430</b>	Cohesive Fracture and Scaling			MWF 4:00-5:50 Bazant	
<b>CIV_ENV 415</b>	Theory of Elasticity			Brinson	
<b>EECS 381</b>	Electronic Materials: Properties and Applications		MWF 1:00 Mohseni		
<b>EECS 384</b>	Solid State Electronic Devices		TuTh 3:30 Grayson		
<b>ES_APPM 311-1</b>	Methods in Applied Math	20	MWF 12:00 Olmstead		
<b>ES_APPM 311-1</b>	Methods in Applied Math	21	MWF 11:00 Olmstead		
<b>ES_APPM 495</b>	Modeling of Soft Materials		TTh 12:30-1:50 Luijten		
<b>ES_APPM 495</b>	Intro to Statistical Mechanics			TBA Luijten	

<b>Chem 360</b>	Nanopatterning			TTH 1:00 Odom	
<b>Chem 407</b>	Materials and Nanochemistry		Tu-Th 11:00-12:20 Schaller		
<b>Chem_Eng 361</b>	Introduction to Polymers		MTWF 10:00 Torkelson		
<b>Chem_Eng 451</b>	Applied Molecular Modeling				
<b>Chem_Eng 462</b>	Viscoelasticity and Flow in Polymer Systems				
<b>Chem_Eng 475</b>	Cell-Material Interactions			MW 4:00-5:30 Shea	
<b>Chem_Eng 478</b>	Advances in Biotechnology				W 12-2, F 1-2 Shea
<b>BME 343</b>	Biomaterials and Medical Devices				
<b>ME 445</b>	Micromanufacturing		TuTh 9:30-11 Cao		
<b>ME 456</b>	Mechanics of Advanced Materials				
<b>ME 495</b>	Nanoengineered Materials for Mecanobiology				
<b>ME 495</b>	Nuvention: Medical Innovation		TBA 6:00-9:00 PM Marasco	<b>Note:</b> Interested students can contact Kevin Henderson (current MSE grad student) for advice	
<b>ME 381</b>	Intro to Micro-electro-mechanical systems		MWF 11:00 Espinosa		
<b>ME 382</b>	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