

Course Schedule - CHECK WEB SITE REGULARILY FOR UPDATES AND CHANGES

CURRENT VERSION: May 28, 2010 (Note update to Final Exam schedule!)

Week	Lecture Topic	Reading	Homework	Laboratory
Week 1 March 30	<ul style="list-style-type: none"> • Introduction; Bonding in Solids • Metallic Crystal Structures • Ionic Crystal Structures 	1: 1-5, 2: 1-8 3: 1-7 12: 1-4	<i>No homework due this week</i>	NO LAB
Week 2 April 5	<ul style="list-style-type: none"> • Crystal Directions & Planes • Crystalline & Noncrystalline solids • Imperfections in Crystals 	3: 8-12 3: 13-17 4: 1-11	2: 11, 22 3: 3, 8, 13 12: 1, 5, 13	Lab Safety Tour Lab I: What is in it and Why?
Week 3 April 12	<ul style="list-style-type: none"> • Diffusion • Elastic Properties • Mechanical Properties 	5: 1-6 6: 1-5 6: 6-12	3: 23, 32, 35, 39, 42, 54 4: 1, 8, 28	Lab II: Crystal Structure Notebooks due
Week 4 April 19	<ul style="list-style-type: none"> • Slip in Crystalline Materials • Strengthening Mechanisms • Recrystallization and Grain growth 	7: 1-6 7: 8-10 7:11-17	5: 3, 13, 22 6: 5, 8, 12, 16	Lab III: Work Hardening and Annealing Notebooks Due
Week 5 April 26	<ul style="list-style-type: none"> • Failure • Failure • MIDTERM EXAM April 30 	8: 1-6 Chaps. 1-7.10	6: 23, 32, 37, 45 7: 1, 9, 14, 32	Open Review
Week 6 May 3	<ul style="list-style-type: none"> • Solubility Limits • Phase Diagrams • Binary microstructures 	8: 7-15 9: 1-8; 9: 9-11	7: 31 8: 1, 5, 13, 20, 30, 35 (Due 5/7, 5pm)	Lab IVa: Heat Treatment Notebooks Due
Week 7 May 10	<ul style="list-style-type: none"> • Fe-C Phase Diagram • Phase Transformations • Phase Transformations 	9: 12-17 9: 18-20 10: 1-9	9: 18, 25, 42, 56, 60 10: 9, 18 (Due: 5/14, 5pm)	Lab IVb: microstructure Notebooks Due
Week 8 May 17	<ul style="list-style-type: none"> • Heat Treatment of metals • Polymers • Polymer properties 	11: 1-9 14: 1-14 15: 1-14	10: 23, 34; 11: 4, 12, 27, 30 12: 35, 41 (Due: 5/21, 5pm)	Lab V: Mechanical Testing (Due for everyone Fri 5/28, 5pm)

Week 9 May 24	<ul style="list-style-type: none"> • Ceramic properties • Composites • Electrical Properties 	12: 8-11 16: 1-10, 14-15 18: 1-9	14: 5, 10, 23 15: 11, 20 16: 8 and 17 (Due: 5/28, 5pm)	Lab VI: What is in it and why? Part 2. (Due for everyone Fri 6/4, 5pm)
Week 10 May31	<ul style="list-style-type: none"> • May 31 Memorial day • Electrical Properties • Corrosion 	18: 10-13 17: 1-13	Turn in: 18: 7, 10, 17, 21, 29, 31 (Due 6/4, 5pm) Review only: 17: 2, 8, 21 (Solutions are posted on the website. Not graded since lecture on Ch. 17 is on the due date)	Open Review
	<ul style="list-style-type: none"> • Final Exam 	Section A: Tuesday, June 8, 8:30- 10:20 a.m. Section B: Thursday, June 10, 8:30-10:20 AM		