## Course Schedule - CHECK WEB SITE REGULARLY FOR UPDATES AND CHANGES

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

<table>
<thead>
<tr>
<th>Week</th>
<th>Lecture Topic</th>
<th>Reading</th>
<th>Homework</th>
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| Week 1 March 30 | • Introduction; Bonding in Solids  
• Metallic Crystal Structures  
• Ionic Crystal Structures | 1: 1-5, 2: 1-8  
3: 1-7  
12: 1-4 | *No homework due this week* | NO LAB |
| Week 2 April 5 | • 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 | • 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 | • 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 | • 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 | • 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 | • 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 | • 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 | • 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| May 31 | • 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 |
|        |        | • Final Exam                                                 | Section A: Tuesday, June 8, 8:30-10:20 a.m.  
Section B: Thursday, June 10, 8:30-10:20 AM |