Course Syllabus
Physics 470  Solid State Physics    Fall 2005

General Information
Instructor: Dr. R. Knispel  Office: Halsey Science 348  Phone: 920-424-4431
Office Hours: 11:30 to 12:30  MWF, 9:10 to 11:30 Tuesday, and 10:20 to 11:30 Thursday.
Course Meeting Times: Lecture 10:20 to 11:20 MWF  HS457

Course Outline:

Unit 1:  Ch. 1 Material Types  
         Crystal Structure  
         Types of Bonding  
         Ch. 2 Heat Conduction and Heat Capacity  
         Lattice Vibrations and Phonons
Unit 2:  Ch. 3 Electrical Conduction  
         Ch. 4 Conduction in Different Materials
Unit 3:  Ch. 5 Semiconductor Properties  
         Ch. 6 Semiconductor Devices
Unit 4:  Ch. 7 Paramagnetism and Diamagnetism  
         Ch. 8 Ferromagnetism
Unit 5:  Ch. 10 Superconductors  
         Other Topics

There will be an in-class component and a take-home component on each unit. Since class times are one hour, the in-class test components will be short and somewhat qualitative. The test on the last unit will likely be entirely take-home. Each test will constitute 15% of the course grade. The remaining contribution to the course grade will be made from homework (15%) and a project (10%) to be described as the course develops.

Grading Scale:

<table>
<thead>
<tr>
<th>In-class tests</th>
<th>Take-home Tests</th>
<th>Homework</th>
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<tbody>
<tr>
<td>86-100 A</td>
<td>90-100 A</td>
<td>80-100 A</td>
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<tr>
<td>77-85 AB</td>
<td>84-89 AB</td>
<td>70-79 AB</td>
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<tr>
<td>68-76 B</td>
<td>73-83 B</td>
<td>60-69 B</td>
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<td>62-67 BC</td>
<td>67-72 BC</td>
<td>52-59 BC</td>
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<td>53-61 C</td>
<td>56-66 C</td>
<td>42-51 C</td>
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<td>47-52 CD</td>
<td>50-55 CD</td>
<td>34-41 CD</td>
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<td>40-47 D</td>
<td>40-49 D</td>
<td>25-33 D</td>
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<td>&lt; 40 F</td>
<td>&lt; 40 F</td>
<td>&lt; 25 F</td>
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There will be an opportunity to make some changes and pick up on topics not mentioned explicitly in the syllabus. These will be planned between students and instructor as to course develops.