Physics 221 Syllabus  
Spring 2005

Dr. Sanders  
Nielsen 504/214  
974-7827 (temporary)/576-6931  
Text: *College Physics* by Giancoli

Office Hours:  
Tu-Th 8:00-9:40

Lecture Hours:  
09:40 Tu-Th

General Course Description
This course is intended to provide a foundation on kinematics, dynamics, thermodynamics, waves, and optics. Prerequisite: Math 130 (precalculus) or calculus. A good (>3.2) GPA is desirable.

Grading Policy  All tests and quizzes are closed-book. The semester grade will be computed as follows:

- Average of 3 hour tests: 30%
- Lab average: 30 (must score at least 60 to pass course)
- Homework average: 10 (must score at least 60 to pass course)
- Pop quiz average (if applicable): see below
- Final exam: 30
- Total: 100%

Semester grades will be curved. Median = C+

Attendance and Quizzes  Grade performance is strongly correlated with regular attendance. Roll may be taken. If absences become noticeably large, pop quizzes will begin, and the pop quiz average will be 10% of your final grade, while the hour tests and lab averages will decrease 5%. Your lowest pop quiz grade will be dropped. If you need to leave or arrive late, I would appreciate advance notice by E-Mail.

Makeup Policy  A comprehensive make-up hour test will be given at 07:00 (a.m.) Tuesday, April 19, unless otherwise arranged. It will be difficult. This test may be substituted for one (1) missed hour test. You are strongly encouraged to take all hour tests. In particular, it is usually a bad mistake to skip the first test just because you think you have not studied enough to do well on it.

No pop quiz make-ups. Make-ups of recitation quizzes or labs at lab instructor's discretion.

Homework  Homework will be web-based: homework.phys.utk.edu. You will need a password and your UT e-mail address for authorization for each problem set. It is recommended that you attempt all homework problems before the corresponding lecture, in order to maximize the benefit of lecture. Test problems are often re-worded versions of homework problems. *Verbum sapientibus.*

Snow Policy  UT is chiefly a residential institution. Lectures will continue despite snow unless UT is officially closed. However, if Knox County Schools are closed (not merely opening late) due to snow or ice on a day when an hour test is scheduled, the test will be held the next lecture period when Knox County Schools re-open.

Calculators  A calculator with trig functions is required. Desirable that calculator have full display of equation and capability for re-display and editing (e.g., TI30X II, anything in TI80 series, Casio CFX-9850GB+).

Bomb Threats  In the event of a bomb threat in the Physics Building during/before an exam, turn in your exam booklet and assemble at the flag pole. An alternative examination room is pre-arranged.

Use of old lab grades  If you are repeating, you may wish to use an old lab grade. In this case, (1) you must attend recitation; your new lab grade will be an average of your new quiz grade and your old lab grade; (2) you must also attend lab until your previous TA or lecturer sends your old lab grade to me and to your current lab instructor by e-mail; this must happen by the first drop deadline (Jan 21, not Jan 31 or Feb 22); otherwise you must continue to attend lab, and (3) the old lab grade must be no more than one year old.

Academic Honesty  Academic honest is expected at all times.

*The hard-copy syllabus takes precedence over any other information except announcements in lecture.*
Physics 221 Syllabus  
Spring 2005

Schedule
This schedule is tentative. Students are responsible for any changes announced *in lecture.*

<table>
<thead>
<tr>
<th>Week of</th>
<th>Chapter: Subjects</th>
<th>Homework</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jan 10</td>
<td>1: Models, units, dimensions, uncertainty</td>
<td>Q-5; E&amp;P-3,7,9,19,23,29,34,49,63</td>
</tr>
<tr>
<td>Jan 17</td>
<td>2: 1-D motion; constant acceleration</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3: 2-D motion; vectors</td>
<td></td>
</tr>
<tr>
<td>Jan 24</td>
<td>4: force; Newton's laws</td>
<td></td>
</tr>
<tr>
<td>Oct 31</td>
<td>Review/problem session</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Test Thursday</td>
<td></td>
</tr>
</tbody>
</table>

  **Hour Test I on Chapters  1-4**

| Feb 7    | 5: Circular motion; gravitation                                                    |           |
|          | 6: Work & energy; energy conservation                                              |           |
| Feb 14   | 7: Linear momentum; conservation laws                                              |           |
|          | 8: Rotational motion                                                               |           |
| Feb 21   | 9: Bodies in equilibrium                                                            |           |
|          | 9 cont: Elasticity & fracture                                                       |           |
| Feb 28   | Review/problem session                                                             |           |
|          | Test Thursday                                                                       |           |

  **Hour Test II on Chapters  5-9**

| Mar 7    | 10: Fluids                                                                         |           |
|          | 11: Vibrations; simple harmonic motion                                              |           |
| Mar 14   | 11: Waves                                                                          |           |
|          | 12: Sound                                                                          |           |
| Mar 21   | **Spring break**                                                                   |           |
| Mar 28   | 13: Temperature; ideal-gas laws; kinetic theory                                     |           |
|          | 13: cont                                                                           |           |
| April 4  | 14: Heat; heat transfer (3 ways: conduction, radiation, & convection)               |           |
|          | Review/problem session                                                             |           |
| April 11 | Test Tuesday                                                                       |           |

  **Hour Test III on chapters  10-14**

| April 18 | 23: Light rays                                                                     |           |
|          | 24: Wave optics; diffraction; interference                                         |           |
| April 25 | Wrap-up & summary (This is *important*--it is a recap of the entire course.)       |           |
|          | Study period Thurs & Fri; FINAL EXAMS begin Monday May 2                            |           |
|          | **FINAL EXAMINATION now scheduled for 10:15 am Tuesday May 3**                     |           |
|          | **Missing the final exam is a very extremely serious offense. Don't do it.**        |           |