

**Physics 221- 6B****GENERAL PHYSICS**

Summer, 2005

Lecture: TTH 10:20 am - 1:20 pm

Room: 301 CH

Instructor: Dr. Harrison

Office: 308 CH

Textbook: Fundamentals of Physics (7<sup>th</sup> Ed.)  
by Halliday, Resnick, & Walker

Hours: MW 10:00 -11:30 am

email: [jgharrison@uab.edu](mailto:jgharrison@uab.edu)Course Website: <http://homework.phy.uab.edu/~harrison/phys221>**Composition of Final Course Grade**

|            |     |  |   |
|------------|-----|--|---|
| Exam I     | 15% | (60 min)   | } The 1-hour exams will be given during the <b>last hour</b> of the period. |
| Exam II    | 20% | (60 min)   |   |
| Exam III   | 20% | (60 min)   |   |
| Lab        | 15% | (transfer of old grade is your responsibility)             |   |
| Quizzes    | 5%  | (unannounced, open-book, open notes, at end of period)     |   |
| Final Exam | 25% | ( 2.5 hrs. Tue., Aug. 9, 8:00 - 10:30 am)                  |   |
| Homework   |     | (up to 5 points <i>extra credit</i> added to course grade) |   |

**Grading Scale:** 100-90 A, 89-80 B, 79-70 C, 69-60 D, < 60

**Withdrawing From This Course:** You may withdraw from a course and receive a grade of "W" up to and including July 12, 2005. After that date you may not withdraw. See full text of this policy at: [http://www.catalog.uab.edu/UAB-Catalog2004-2006/progress\\_toward\\_degree.pdf](http://www.catalog.uab.edu/UAB-Catalog2004-2006/progress_toward_degree.pdf)

**Use of reference material during exams:** You may bring to each exam one 5" x 8" card on which you may write anything you feel may be useful (formulas, examples, etc.). The card must have your name printed at the top and must be turned in with the examination paper.

**Problem Assignments:** You will be given a set of individualized homework problems to be collected and graded by a computerized homework service. You may work on these on your own at any time. The grade assigned by the service can be used to add up to 5 points to your final grade. A second set of problems is listed in the course schedule below. This second set will **not** be collected or graded; however, solutions to this set will be posted on the course web site. You should work through the problems on your own before going through the posted solutions. *Do not fall into the trap of thinking that you can adequately prepare for the exams by just reading through the solutions. Success on exams depends on your ability to solve problems not just your ability to follow solutions.*

**Major Topics/Objectives:** The principal topics this semester will be: 1) the subject of mechanics which deals with the description and analysis of the motion of objects or conditions which prevent motion; 2) oscillations, waves, and wave propagation. We will use trigonometry, vectors, differential and integral calculus as tools to quantify our study. By the end of the semester you should be able to: 1) Read a description of a problem, identifying key words and phrases that point to a solution. 2) Set up a figure or diagram to assist in analyzing the problem. 3) Determine what equations are needed and carry out the mathematical operations to arrive at a solution. Thus the central goal is *not* memorization of formulas but development of analytical skill.

**Quizzes:** You should come to class prepared for a short 10- or 15-minute quiz on material previously covered in class or in your textbook. Quizzes will not be given at each class meeting, but will NOT be announced ahead of time and, when given, will be given at the end of the period. These will be open-book/open-notes format, BUT strictly limited in time; "winging it" won't work -- come prepared.

**Syllabus:** The attached syllabus is tentative. Any changes will be announced in class. You are responsible for any changes which may be announced during the lecture period, such as changes in exam dates or chapters to be included on an exam

| Week of | Tue.                                  | Thu.                                   |
|---------|---------------------------------------|--|
| May 29  | <b>NO CLASS</b>                       | Ch. 1; 2.1 - 2.10                      |
| Jun. 5  | 2.10; 3.1 - 3.8                       | 4.1 – 4.9                              |
| Jun. 12 | 5.1- 5.9                              | 6.1 – 6.3; 6.5 (skip 6.4)              |
| Jun. 19 | 7.1 – 7.6; <b>Exam 1 (Ch. 1- 4)</b>   | 7.6 – 7.9; 8.1 – 8.3                   |
| Jun. 26 | 8.3 – 8.8; 9.1 – 9.3                  | 9.4 – 9.11 (skip 9.12)                 |
| Jul. 3  | 10.1 -10.3; <b>Exam 2 (Ch. 5 – 8)</b> | 10.3 – 10.10; 11.1 – 11.2              |
| Jul. 10 | 11.2 – 11.12                          | 11.12; 12.1 – 12.5 (skip 12.6-12.7)    |
| Jul. 17 | 15.1 – 15.9                           | 16.1 – 16.4 <b>Exam 3 (Ch. 9 - 12)</b> |
| Jul. 24 | 16.4 – 16.10                          | 16.11 - 16.13; 17.1 – 17.3             |
| Jul. 31 | 17.3 – 17.9                           | <b>NO CLASS</b>                        |
| Aug. 7  | <b>FINEX 8:00 - 10:30 AM</b>          |  |

| <b>Problem Assignments</b> |   |                    |                  |
|----------------------------|---|--------------------|------------------|
| <b>Set</b>                 | <b>Problem #</b>                                  | <b>pg</b>          | <b>Post &gt;</b> |
| 1                          | 5, 7, 10, 19, 21, 23, 58<br>3, 11, 12, 16, 20, 25 | 8 - 12;<br>30 - 37 | Jun. 3           |
| 2                          | 39, 43, 52, 61, 63, 64, 97, 105, 106, 117         | 30 - 37            | Jun. 3           |
| 3                          | 5, 11, 19, 34, 38, 39, 45, 49, 77                 | 53 - 57            | Jun. 7           |
| 4                          | 11, 15, 19, 21, 27, 30, 45, 48, 56, 60, 66, 85    | 76 - 86            | Jun. 10          |
| 5                          | 3, 5, 9, 13, 24, 33, 40, 41                       | 107 - 113          | Jun. 15          |
| 6                          | 45, 50, 52, 54, 63, 64, 80                        | 107 - 113          | Jun. 20          |
| 7                          | 11, 21, 28, 30, 37, 45, 47, 68, 97, 104, 106      | 130 - 139          | Jun. 23          |
| 8                          | 2, 3, 8, 13, 31, 35, 44, 49, 50, 51, 63, 71, 77   | 159 - 165          | Jun. 23          |
| 9                          | 3, 4, 11, 21, 25, 28, 31, 34, 43                  | 188 - 200          | Jun. 27          |
| 10                         | 50, 51, 57, 59, 71, 76, 95, 124                   | 188 - 200          | Jun. 30          |
| 11                         | 1, 3, 6, 10, 15, 17, 20, 26, 32, 33               | 229 - 240          | Jul. 7           |
| 12                         | 43, 49, 54, 56, 60, 65, 67, 84, 99, 109           | 229 - 240          | Jul. 12          |
| 13                         | 4, 7, 11, 15, 26, 29, 31, 41, 43                  | 265 - 274          | Jul. 14          |
| 14                         | 48, 53, 54, 55, 60, 61, 67, 78                    | 265 - 274          | Jul. 15          |
| 15                         | 6, 8, 22, 24, 35, 42, 43, 45, 64, 80              | 297 - 304          | Jul. 18          |
| 16                         | 10, 14, 21, 22, 28, 32, 60                        | 321 - 329          | Jul. 20          |
| 17                         | 5, 7, 9, 24, 25, 31, 37, 44, 51, 59, 62           | 405 - 412          | Jul. 26          |
| 18                         | 6, 18, 19, 23, 24, 33, 36, 39, 47, 51, 54, 94     | 437 - 444          | Aug. 1           |
| 19                         | 6, 9, 16, 17, 24, 30, 35, 39, 47, 54, 72, 83      | 467 - 475          | Aug. 1           |