PHYSICS 201 (General Physics), Fall 2012

Instructor:
Professor Richard Taylor
Office: 173 Willamette Hall, telephone: 541 - 346 - 4741, email: rpt@uoregon.edu
Office hours*: Monday, Wednesday and Friday 12.00-1.00pm (held in Willamette 175)
(*These are the times when I am guaranteed to be available. You can also try my office at other times or pre-arrange a meeting).

Lectures: (begin on Monday 24th September)
Objectives: to learn the basic laws of physics in the area of mechanics AND to see that physics can be interesting, relevant to your daily experiences, and even fun!
I will be teaching two nominally identical lectures (9am and 2pm) each Monday, Wednesday and Friday. Therefore, if you can’t make your registered lecture then you can attend the other lecture if seats are available.

Prerequisites: MATH 111 and 112 or equivalent (you must know basic algebra and trigonometry)

Required textbook: Physics (1st or 2nd Custom Edition for the UO) by Douglas Giancoli (published by Prentice Hall). The 1st and 2nd customized editions have identical content to each other. They present the material in a different order to the standard edition and are designed to match the lectures. You will need access to the book on a weekly basis for background reading. If you have regular access to the book without buying it (e.g. sharing etc) this is acceptable. The 2nd Custom edition is available at the Duckstore and comes with an access code for “Mastering Physics” - the on-line homework system. You can also purchase an access code for “Mastering Physics” separately.

Course Website: Blackboard will contain information about the lectures, tutorials and homework assignments. Lecture “hand-outs” will be posted on this website in advance of lectures. It is recommended that you print these out and bring them to the lecture so that you can add notes to these print-outs. Blackboard website: https://blackboard.uoregon.edu/

Tutorials:
In additional to your three lectures, you are required to attend one tutorial session each week. Tutorial sessions occur on Tuesdays and Thursdays and take place in Willamette 112. Tutorials begin on the Thursday of Week One (i.e. September 27th). If your tutorial session falls on a Tuesday, you will not have a tutorial in Week One.

Objectives: Tutorials give you the opportunity to discuss the physics you have met in lectures with your classmates and teaching assistants (TAs). The TA will discuss approaches to solving several of that week’s homework problems. With the support of the TAs, you will also work collaboratively with your classmates to solve a set of tutorial problems. These tutorial problem sets will be posted on Blackboard for you to bring to the tutorial and are designed to help you with your homework by developing and practicing your problem solving skills. The solution set to the tutorial problems will be posted on Blackboard after your tutorial. The tutorial problems are not graded but attendance will be taken at the end of each tutorial (see Grading Section below).
Registration for tutorials: you must register for one of the weekly tutorial sessions using Duckweb (http://duckweb.uoregon.edu/). Each week you should attend your allocated tutorial session unless you have permission from the teaching assistants to attend another session.

Each tutorial has a lead Teaching Assistant. The Blackboard website will contain more detailed information on the tutorials: “ContactInfo” will list the lead teaching assistant for each tutorial along with their office hours (to be arranged) and email addresses. “TutorialTimes” will list the times of each tutorial.

Further help: in addition to your tutorial session and your teaching assistant’s weekly office hours, you can also use the “drop in” help-center located at Willamette room 147. The Drop-in center schedule will be posted soon.

**Weekly Schedule**

Subject matter covered in a particular week (i.e. on the Monday, Wednesday and Friday lectures), will then be reviewed and developed in the following tutorial session. Your tutorial will take place either on the Thursday of that week or the following Tuesday.

**Homework:** Homework problems will be assigned each Wednesday at the “Mastering Physics” website: http://www.masteringphysics.com/site/login.html. The assignment should be completed prior to the deadline of 9am on Thursday morning of the next week (i.e. you have 8 days to complete your assignment, during which time you will have attended your tutorial). *Late homework will not be accepted* because solutions to the homeworks will be available at 9am on Thursday on the Blackboard website (If you have a valid reason for not handing in a homework contact your teaching assistant as soon as possible. They will create a homework score for your missed homework based on average of your other homework scores).

**Mastering Physics Homework:** The first time you log on to the Mastering Physics website using the access code (provided with your textbook), you will be asked to enter your name (which should match the name that you gave the UO) and also the course name: UOPHYS201TAY9AM2012 (for the 9am class) or UOPHYS201TAY2PM2012 (for the 2pm class). The introduction will teach you how to use Mastering Physics. If you encounter difficulties using Mastering Physics, please seek advice from a fellow classmate or our lead teaching assistant Bill Watterson (email: wwatters@uoregon.edu). Because you will be learning how to use the system during the first homework, this assignment will be shorter and be worth fewer points than subsequent homeworks. The problems are taken from the on-line system and their numbers do not correspond to those in the textbook. It is recommended that you print off your assignment and work off-line, going back on-line to submit your answers. You will be allowed six attempts at each problem.

**Grading:**

Tutorials (13%) + Homeworks (15%) + Mid-term 1 exam (23% each) + Mid-term 1 exam (24% each) + 1 Final exam (25%)

The three exams are NOT cumulative in terms of the material covered. The reason for the increasing percentages for the later exams is that we have found that students do better as they get...
used to taking the exams. Note: the physics department has a zero tolerance policy regarding cheating. If you cheat, you will not receive a grade for the course. We also have a consciousness rule. If you fall asleep in the lecture, the professor might drop 5% from your overall grade.

Tutorial marks: 13% of your grade will be based on tutorial attendance as follows. Miss none = 13%, miss one or two tutorials = 12%, miss three = 10%, miss four = 8%, miss five = 6%, miss six = 4%, miss seven = 2%, miss eight = 0%. You may make up for a tutorial during the same cycle in another session if you have advance permission from your lead teaching assistant. A tutorial cannot be made up by attending a tutorial in the next cycle.

Homework grades: There are 8 homeworks and your lowest score will be dropped. Any concerns about the homework marks can be addressed to your teaching assistant or to me. Each week, a histogram of homework marks will be presented in the lecture to give you an idea of your performance relative to your classmates.

Exams: there will be two mid-term exams are in Willamette 100 on Wednesday 17th October (Week 4) and Wednesday 7th November (Week 7). Note that you MUST attend the midterms for your lecture section (e.g if you are registered for the 9am lecture you cannot take the exams associated with the 2pm lecture because the exams are different for the two sections). The final exam time is at 6-8pm on Wednesday December 5th (the location to be arranged but is probably in Columbia 150).

Laboratory: those who are registered in the laboratory PHYS 204 course will find that the laboratory exercises will also help you to understand the physics concepts. For more information on this course contact Prof. Dean Livelybrooks who teaches this course. His email is dlivelyb@uoregon.edu. Labs meet the first week of term.

Reading:
Reading the textbook will greatly enhance your understanding. To help you, the following is an approximate schedule (page numbers and sections refer to the customized edition):

<table>
<thead>
<tr>
<th>Week</th>
<th>Chapter</th>
<th>Topics</th>
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<tbody>
<tr>
<td>1: Sept. 24</td>
<td>1(all), 2-1 to 2-3, 2-8</td>
<td>Experimental science, measurements, position and velocity in one dimension, kinematics, graphical representation</td>
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<tr>
<td>2: Oct. 1</td>
<td>2-4 to 2-7, 3-1 to 3-4</td>
<td>Motion with constant acceleration, falling objects, Newton’s First and Second Laws of Motion</td>
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<tr>
<td>3. Oct .8</td>
<td>3-5 to 3-6, 4-1 to 4-4</td>
<td>Newton’s Third Law, weight, vectors</td>
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<tr>
<td>4. Oct. 15</td>
<td>4-5 to 4-11</td>
<td>Projectile motion, Newton’s laws in two dimensions</td>
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<td>5. Oct. 22</td>
<td>5(all)</td>
<td>Circular motion, gravitation</td>
</tr>
<tr>
<td>Date</td>
<td>Pages</td>
<td>Topic</td>
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<tr>
<td>6. Oct. 29</td>
<td>6-1 to 6-3, 7-1 to 7-3</td>
<td>Impulse and momentum, work and kinetic energy</td>
</tr>
<tr>
<td>7. Nov. 5</td>
<td>7-4 to 7-14</td>
<td>Potential energy, conservation of energy, power, elastic and inelastic collisions</td>
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<td>8. Nov. 12</td>
<td>6-4, 8(all)</td>
<td>Center of mass, rotational motion</td>
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<td>9. Nov. 19</td>
<td>9-1 to 9-4</td>
<td>Bodies in equilibrium</td>
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<tr>
<td>10. Nov. 26</td>
<td>10-1 to 10-9</td>
<td>Fluids, pressure</td>
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Successful Problem solving:

Here’s a few guidelines on solving problems:

Draw a clear diagram(s) indicating the situation

Think about the principles involved. Write them down!

Write down the quantities that are known and the quantities you want to know

State any appropriate equations

Write down numbered steps indicating the logical progression of your reasoning

Clearly mark your answer (underlined or in a box)

Don’t forget units! Check your significant figures!

Check your answer to see if it is reasonable. eg perform an “orders of magnitude” estimate.