PHYSICS 201 General Physics (Fall 2014):
CRN 15074 (11am Lecture) and 15087 (2pm Lecture)

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 (Willamette 173) at other times or pre-arrange a meeting.

Lectures: (begin on Monday 29th September)
Objectives: to learn the basic laws of physics in the field of mechanics AND to see that physics can be interesting, relevant to your daily experiences, and even fun! More specifically, learning outcomes include developing: 1) a working knowledge of the principles and concepts of mechanics, 2) the ability to apply these concepts to analyze problems, 3) the ability to work both independently and in collaboration with your peers, 4) the ability to communicate your understanding of mechanics orally and in writing.

I will be teaching two nominally identical lectures (11am 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.

You will not be graded on lecture attendance. We do, however, have a consciousness rule - if you fall asleep in the lecture, we might drop 5% from your overall grade. The supplement to the textbook (see below) contains selected lecture slides and spaces for you to add your own notes. If you miss a lecture, make sure you obtain the notes from a fellow student.

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

Course Website: Blackboard https://blackboard.uoregon.edu/

Required textbook: Physics, Custom Edition for the UO by Douglas Giancoli (published by Prentice Hall, ISBN 9781269535250). You will need access to this book on a weekly basis for background reading. The customized edition presents the material in a different order to the standard edition and is designed to match the lectures. It also comes with a free supplement and an access code for “Mastering Physics” (the on-line homework system). The Custom edition will be available at the Duckstore close to the start of the Fall term.

Tutorials:
In additional to your 3 lectures, you are required to attend 1 tutorial session each week. Tutorial sessions take place in Willamette 112. Tutorials start in week 2.

Objectives: Tutorials give you the opportunity to discuss the physics you have met in lectures with your classmates and teaching assistants (TAs). With the support of the TAs, you will work collaboratively with your classmates to solve a set of tutorial problems. These tutorial problem sets 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.

**Teaching Assistants.** The document “Office Hours” on Blackboard will list TA office hours (to be arranged) and email addresses. You can attend the office hours of any of the course TAs (i.e. not just the TAs in your tutorial).

Further help: in addition to your tutorial session and 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.

**Homework:** Homework problems will be assigned each Tuesday 6pm at the “Mastering Physics” website. 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 homework solutions 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 tutorial’s 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 (http://www.pearsonmylabandmastering.com/northamerica/masteringphysics/) using the access code (provided with your custom textbook), you will be asked to enter your name (which should match the name that you gave the UO) and also the course name: UOPHYS201TAYLOR11AM2014 (for the 11am class) or UOPHYS201TAYLOR2PM2014 (for the 2pm class). When prompted to select the textbook, select Giancoli 6th edition. The introduction will teach you how to use Mastering Physics. 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 6 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 3 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.
Tutorial points: 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 tutorial’s 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 scores can be addressed to your teaching assistant or to me. Each week, a histogram of homework scores will be presented in the lecture to give you an idea of your performance relative to your classmates.

Exams: The two midterms will take place in Weeks 4 (Oct 20th) and 7 (Nov 10th) from 5.30-6.30pm. The final will take place in Finals Week (Dec 10th) from 5-7pm. All exams take place in Columbia 150.

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>
</tr>
</thead>
<tbody>
<tr>
<td>1</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>
</tr>
<tr>
<td>2</td>
<td>2.4 to 2.7, 3.1 to 3.3</td>
<td>Motion with constant acceleration, falling objects, Newton’s First Law of Motion</td>
</tr>
<tr>
<td>3</td>
<td>3.3 to 3.6, 4.1 to 4.4</td>
<td>Newton’s Second and Third Law, weight, vectors</td>
</tr>
<tr>
<td>4</td>
<td>4.5 to 4.11</td>
<td>Projectile motion, Newton’s laws in two dimensions</td>
</tr>
<tr>
<td>5</td>
<td>5 (all)</td>
<td>Circular motion, gravitation</td>
</tr>
<tr>
<td>6</td>
<td>6.1 to 6.3, 7.1-7.2</td>
<td>Impulse and momentum, work</td>
</tr>
<tr>
<td>7</td>
<td>7.3 to 7.7</td>
<td>Kinetic and Potential energy, conservation of energy</td>
</tr>
<tr>
<td>8</td>
<td>7.8 to 7.14, 6.4, 8.1 to 8.7</td>
<td>Power, elastic and inelastic collisions, center of mass, rotational motion</td>
</tr>
<tr>
<td>9</td>
<td>8.7 to 8.8, 9.1 to 9.4</td>
<td>Rotation, bodies in equilibrium</td>
</tr>
<tr>
<td>10</td>
<td>10.1 to 10.9</td>
<td>Fluids, pressure</td>
</tr>
</tbody>
</table>
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.