PHYSICS 201 (General Physics), Fall 2008

Instructor:
Professor Richard Taylor
Office: 173 Willamette Hall, telephone: 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 29th 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.

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

Required textbook: Physics, 6th Edition by Douglas Giancoli (Prentice Hall, 2004). In a
collaboration between the UO and Prentice Hall, a reduced-cost customized version of this book is
available at the Duckstore at a cost of $107.00. The customized and standard versions of the book
differ in price but have IDENTICAL content (the customized book comes with a free access code
for an on-line homework system but this system will not be used in Physics 201). You will need
access to the book on a weekly basis (for background reading and also to read the homework
problems). If you have regular access to the book without buying it (e.g. sharing etc) this is ok. The
Science Library will also have a limited number of books available.

Website: Blackboard will contain information about the lectures, tutorials, homework assignments
and homework solutions. 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/

If you need access to a computer see: http://cc.uoregon.edu/campuslabs.html

Tutorials:
In additional to your three lectures, you are required to attend one tutorial session each week.
Tutorials begin on the Thursday of Week One (i.e. October 2nd). 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 teaching assistants will discuss approaches to
solving several of that week’s homework problems. With the support of the teaching assistants, you
will also work collaboratively with your classmates to solve a set of tutorial problems. Given out at
the beginning of each tutorial, these problems are designed to help you with your homework by
developing and practicing your problem solving skills. You will be given a solution set to the
tutorial problems at the end of each tutorial. The tutorial problems are not marked 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/) or duckcall (346-1600). If you are unable to attend your registered tutorial session due to schedule conflicts, we will re-assign you to another tutorial session during Week One. You must finalize your choice of tutorial session in the first week. 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. Their contact details are listed below. The Blackboard website has more detailed information on the tutorials: “TAinfo” lists the lead teaching assistant for each tutorial along with their office hour (to be arranged during your first tutorial). “Tutorialinfo” is a list of the times and locations of each tutorial.

Further help: in addition to your tutorial session and your teaching assistant’s weekly office hour, you can also use the “drop in” help-center located at Willamette rm 147. The Drop-in center schedule can be found here: http://hendrix.uoregon.edu/~dlivelyb/TA_assign/index.html.

Email addresses of the Teaching Assistants:
Billy Scannell (Head TA): Billy@physics.uoregon.edu
David Gloter: dgloter@uoregon.edu
Victor Fiore: fiorev@lafayette.edu
Megan Ray: mray1@uoregon.edu
Erik Johnson: ejohnson@mail.colgate.edu
Jonathan Mackrory: jonathan.mackrory@gmail.com
Rick Montgomery: rick.montgomery@gmail.com
Cassandra Niman: csniman@gmail.com
Yonatan Schultz: yschultz@uoregon.edu
Michael Taormina: mike.taormina@gmail.com
Xianghui Luo: xluo@uoregon.edu

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: About 10-15 homework questions and problems will be assigned for grading each week. Each Wednesday, the homework assignment will be posted on the Blackboard website and also announced in the lecture. The completed assignment should be placed in your teaching assistant’s slot in the basement of Willamette Hall no later than noon 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 posted on the Blackboard website at noon on Thursday (if you have an exceptional reason for not handing in a homework contact your teaching assistant as soon as possible).
Grading:
Tutorials (10%) + Homeworks (35%) + 2 Mid-term exams (15% each) + 1 Final exam (25%)

Tutorial marks: 10% of your grade will be based on tutorial attendance as follows. Miss none or one =10%, miss two=8%, miss three=7%, miss four=6%, miss five=5% etc. 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 marks: Your lowest homework score will be dropped. The marked homeworks will be handed back to you during your tutorial session (if you miss your tutorial you can collect your homework during your lead teaching assistant’s office hour). 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. You will be able to check your marks on Blackboard.

Exams: there will be two mid-term exams (on Wednesday 22nd October and Wednesday 12th November in Willamette 100). The final exam is also in Willamette 100. The final exam time depends on whether you are registered for the 9am or 2pm class. For students in the 9am class, the final will take place at 10.15-12.15 on Wednesday 10th December. For students in the 2pm class, the exam will take place at 3.15-5.15pm on Monday 8th December. Note that you MUST attend the midterm and final exams 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).

Laboratory: those who are registered in the laboratory PHYS 204 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: 225 Willamette Hall, email: dlivelyb@uoregon.edu. Website: http://hendrix.uoregon.edu/~dlivelyb/uo_ipl/index.html. Labs meet the first week of term.

Syllabus:
Reading the textbook will greatly enhance your understanding. To help you, the following is an approximate schedule:

<table>
<thead>
<tr>
<th>Week</th>
<th>Chapter</th>
<th>Topics</th>
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<tbody>
<tr>
<td>1: Sept. 26</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. 3</td>
<td>2-4 to 2-7, 4-1 to 4-4</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 .10</td>
<td>4-5 to 4-6, 3-1 to 3-4</td>
<td>Newton’s Third Law, weight, vectors</td>
</tr>
<tr>
<td>4. Oct. 17</td>
<td>3-5 to 3-8, 4-7 to 4-9</td>
<td>Projectile motion, Newton’s laws in two</td>
</tr>
<tr>
<td>Date</td>
<td>Sections</td>
<td>Topics</td>
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<tr>
<td>5. Oct. 24</td>
<td>5(all)</td>
<td>Circular motion, gravitation</td>
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<tr>
<td>6. Oct. 31</td>
<td>7-1 to 7-3, 6-1 to 6-3</td>
<td>Impulse and momentum, work and kinetic energy</td>
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<tr>
<td>7. Nov. 7</td>
<td>6-4 to 6-10, 7-4 to 7-6</td>
<td>Potential energy, conservation of energy, power, elastic and inelastic collisions</td>
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<tr>
<td>8. Nov. 14</td>
<td>7-8, 8(all)</td>
<td>Center of mass, rotational motion</td>
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<td>9. Nov. 21</td>
<td>9-1 to 9-5</td>
<td>Bodies in equilibrium</td>
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<tr>
<td>10. Nov. 28</td>
<td>10-1 to 10-9</td>
<td>Fluids, pressure, Pascal’s principle, Archimedes Principle, Bernouilli’s equation</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.