Course Syllabus

PHYS 101 Essentials of Physics

Fundamental Physical Principles: Mechanics

Fall 2015

Lecture: CRN 14986
Class: 12:00pm – 12:50pm: MWF; Location: 100 WIL
Prerequisite: High school algebra

Instructor: Bijan Shahir
Office: 177 Willamette Hall
Hours: Tuesday 12pm – 1pm, Wednesday: 10am–11am, Friday 1pm – 2pm, or by appointment
Phone: 541-346-4161
Email: bijan@uoregon.edu

GTFs:
Tom Tong: ttong2@uoregon.edu, 463 WIL, Monday: 2pm – 3pm
Mo Nouri: mnourik2@uoregon.edu, 271 WIL, Tuesday: 1pm – 2pm
Amanda Steinhebel: asteinhe@uoregon.edu, 218 WIL, Thursday: 2pm –3pm
Mike Pool: poolmw@gmail.com, 220 WIL, Wednesday 1pm – 2pm

Required Materials: Here is the student pricing for all options for PHYS 101 at The Duck Store:
  $208.50 – text with MasteringPhysics Access Code
  OR
  $143.75 – loose-leaf version of text with MasteringPhysics Access Code
  OR
  $110.00 – MasteringPhysics Access Code with FULL e-text version of the text

i>clicker

Course Content:
This course focuses on mechanics, a subject that is the foundation of all of physics. After a quick introduction to early natural philosophies, most of this course focuses on Newtonian mechanics and its manifestations. Newton's three laws of motion provide an early example of the changes in western thought embodied by The Enlightenment. Newton unified our understanding of 'heavenly' and 'earthly' forces while at the same time providing a framework within which natural phenomena could be understood.

The first third of the course will be spent investigating the kinematic concepts of force, mass, acceleration, velocity & displacement, and the relationships among these. The next third will deal with dynamical phenomena described in terms of momentum, work, and energy. The course concludes by discussing Newtonian gravitation, satellite and planetary motions.

The course is primarily conceptual in nature, using only simple high school algebra to help illuminate the underlying physical phenomena. Simple numerical and conceptual problems will be assigned in homework sets, and use of a calculator will be helpful but not essential.
Course Objectives:
During Physics 101 course, you will learn the basic principles of physics, otherwise known as Newtonian Mechanics. You will also learn to analyze everyday phenomena utilizing physical laws. Lastly, you will use logical progression of your reasoning to draw a sound scientific conclusion.

Canvas:
At https://canvas.uoregon.edu/ you may login and access course documents such as this syllabus. In addition, you may view announcements, modules, course materials, and scores on tests at any time. If you have problems of logging in please contact cmetconsult@ithelp.uoregon.edu (541-346-1942).

i>clicker:
There will be several clicker questions in each hour of the lecture. You will get one credit for being in class for every hour of the lecture. Additionally, you will get an extra credit for answering each question correctly. 10% of your overall grade will be devoted to the clicker questions. The two lowest score of the clicker questions will be dropped.

Login:
You only have to register once, and if you have already registered your i>clicker this term (Fall 2015), ignore this part. To register your i>clicker, please do the following:

1) Log in to Canvas “PHYS 101 (Fall2015; 14986), Essentials of Physics” course
2) In the upper left corner click on “i>clicker”
3) Enter the 8-character of your i>clicker into i>clicker Remote ID box and press the “Register” button

MasteringPhysics:
The following is the link for “MasteringPhysics Registration Guidelines” – follow the instructions and please use FALL15MP as your Course ID:

MasteringPhysics registration:
http://www.pearsonmylabandmastering.com/northamerica/masteringphysics/students/get-registered/index.html

MasterinPhysics login: https://www.masteringphysics.com/site/login.html

Homework:
We will be using a web based homework system called MasteringPhysics. You will submit your homework answers via computer. This is to give quick feedback to homework questions. You will be allowed a stated number of attempts to submit a correct assignment (Saving homework does not count as a submission.) THE DUE DATES ARE SET FOR FRIDAYS, AND NO LATE HOMEWORK WILL BE GRADED. Note: the questions in MasteringPhysics are written algorithmically and variables/numbers are randomly generated, so the numbers for the problems and question will be different for each student. If you figure out how to solve the problem as a group, you will still have to calculate your values for your own answer. The lowest homework grade will be dropped.

Help Sessions:
Drop-in Help Sessions are available at Willamette Room 147. Please make sure pick up a schedule in the Physics Office.
Exams:
1) Midterm Exam 1: Wednesday, October 21st (Week 4)
2) Midterm Exam 2: Wednesday, November 11th (Week 7)
3) Final Exam (Comprehensive): Thursday, 10:15am, December 10th (Week 11)

Quizzes:
We’ll have 10 – 15 minute quiz on Wednesdays with the exception of mid-term weeks. Your lowest quiz grade will be dropped.

A 5x7 inch index card with formulae on it will be allowed in quizzes and exams. No late homework, or make-up quizzes and exams will be allowed. For extreme circumstances, exceptions will be made ONLY for midterm and final exams.

Weekly Schedule:
The given schedule is tentative; changes will be discussed in class and posted online.

<table>
<thead>
<tr>
<th>Date</th>
<th>Chapters</th>
<th>Lecture Topics</th>
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<tbody>
<tr>
<td>September 28</td>
<td>1, 2</td>
<td>Absolute Science, Newton’s 1st Law of Motion - Inertia</td>
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<tr>
<td>October 5</td>
<td>2, 3</td>
<td>Linear Motion</td>
</tr>
<tr>
<td>October 12</td>
<td>3, 4</td>
<td>Newton’s 2nd Law of Motion</td>
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<tr>
<td>October 19</td>
<td>5</td>
<td>Newton’s 3rd Law of Motion + 1st Midterm Exam (Chapters:1-4)</td>
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<tr>
<td>October 26</td>
<td>5, 6</td>
<td>Momentum</td>
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<tr>
<td>November 2</td>
<td>6, 7</td>
<td>Energy</td>
</tr>
<tr>
<td>November 9</td>
<td>8</td>
<td>Rotational Motion + 2nd Midterm Exam (Chapters:5-7)</td>
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<tr>
<td>November 16</td>
<td>8, 9</td>
<td>Gravity</td>
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<td>November 23</td>
<td>9, 10</td>
<td>Projectile and Satellite Motion</td>
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<tr>
<td>November 30</td>
<td>10, 11</td>
<td>The Atomic Nature of Matter</td>
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<tr>
<td>December 10</td>
<td>1 – 11</td>
<td>FINAL EXAM Comprehensive Wednesday, 10:15am</td>
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Important Dates [http://registrar.uoregon.edu/calendars/academic?ts=Fall%202015]:

Monday of 2nd week (October 5)         Last day to drop without a “W” and only 75% tuition refund
Wednesday of 2nd week (October 7)     Last day to add classes
Sunday after 7th week (November 15)    Last day to withdraw (drop with a “W”) or change to P/NP
Thurs/Fri of 9th week (November 26 - 27) Thanksgiving Day; no classes are held

Course grade determined by:

Homework: 15%
i>clicker problems: 10%
Quizzes: 10%
2 midterm exams: 15% + 15%
Final exam (comprehensive): 35%

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<thead>
<tr>
<th>Final Course Grade</th>
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<tbody>
<tr>
<td>97% or above A+</td>
<td>83% to 86.9% B</td>
<td>70% to 72.9% C-</td>
<td>Less than 60% D</td>
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<tr>
<td>93% to 96.9% A</td>
<td>80% to 82.9% B-</td>
<td>67% to 69.9% D</td>
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<tr>
<td>90% to 92.9% A-</td>
<td>77% to 79.9% C+</td>
<td>63% to 66.9% D+</td>
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<tr>
<td>87% to 89.9% B+</td>
<td>73% to 76.9% C</td>
<td>60% to 62.9% D-</td>
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Curving Grades:
There will be a small adjustment at the end of the term if the course grades on the whole don’t meet my expectations. I will not make this decision until after all the work for the term is done (including the final exam) – the individual assignment will not be graded on a curve.

Special Accommodations:
If you are currently registered with AEC (Accessible Education Center), for a documented disability, please present your paperwork to me as close to the beginning of the term as possible so that we can design a plan for you. If you have a disability but are not registered with AEC, you should contact them as soon as possible (http://aec.uoregon.edu). It is much more likely that measures can be taken to provide adequate special accommodation if the organization is done through AEC.

Student Conduct:
Plagiarism is not acceptable during this course. Consequences for submitting homework answers that are not your original work are as follows:

The first incidence of submitting plagiarized homework solutions or answers, from either the internet or from others’ homework, will result in a zero for that homework assignment. A second incident of plagiarism on homework will result in a zero for the entire quarter’s homework assignments and referral to the Office of the Student Conduct for cheating.

Mutually respect in class is paramount. Violations of the student conduct code result in the incident being included on your student conduct record and can result in a failing grade on any course work related to the violation or a failing grade in the course. The University of Oregon requires all instances of cheating be reported, no matter how small. Cheating includes, but is not limited to:

- Looking at another student’s exam during a test
- Copying the work of another person (student or otherwise) and submitting it as your own
- Copying and pasting from the textbook, Google, Wikipedia, Yahoo, or any external sources are absolutely prohibited
- Using any materials except those explicitly approved during a test-taking situation
- Putting your name on another person’s work, or vice versa.
- Resubmitting graded work that was altered after being returned
- Every effort will be made in this class to deter dishonesty through classroom procedures. You are all welcome to work in groups on homework assignments, but each person must submit their own assignment on-line. It is degrading to impose draconian security measures to enforce honesty. Instead, we will use the honor system in this course and allow each of you to uphold your personal standards of conduct. For those of you who have failed to develop your own ethics, the University has designed the Student Conduct Program. Suspected academic dishonesty will be reported.

**For a list of other descriptions of cheating, see the Student Conduct Code:

http://uodos.uoregon.edu/StudentConductandCommunityStandards/StudentConductCode/tabid/69/Default.aspx
Laptops and Cell Phones in Class:
The use of laptop computers and phones in class is NOT allowed. Why? Several studies show that students using laptops and phones in class spend a great deal of time on non-class related activities (texting, FB, playing games, watching soap operas, etc.) and that these distractions negatively impact both learning and grades. This alone isn’t a reason to ban laptops; you’re responsible for your own performance in class. In addition, however, studies have shown that laptop use distract and impacts the learning of other students nearby. (E.g. Fried, C.B. Computers & Education 50, 960-914 (2008).) Plus, students have complained about the environment created by their classmates’ laptop use. Taking notes by hand, by the way, is more effective in cementing concepts in your mind.

The University of Oregon community is dedicated to the advancement of knowledge and the development of integrity. In order to thrive and excel, this community must preserve the freedom of thought and expression of all its members. The University of Oregon has a long and illustrious history in the area of academic freedom and freedom of speech. A culture of respect that honors the rights, safety, dignity, and worth of every individual is essential to preserve such freedom. We affirm our respect for the rights and well-being of all members.

We further affirm our commitment to:
• Respect the dignity and essential worth of all individuals
• Promote a culture of respect throughout the university community
• Respect the privacy, property, and freedom of others
• Reject bigotry, discrimination, violence, or intimidation of any kind
• Practice personal and academic integrity and expect it from others
• Promote the diversity of opinions, ideas, and backgrounds that is the lifeblood of the university

An equal opportunity, affirmative action institution committed to cultural diversity and compliance with the Americans with Disabilities Act.