PHYS 211: General Physics Mechanics (Summer 2015)

Instructor: Mr. Michael Bell
Office Address: TBD
Office Hours: TBD
E-mail: msb5390@psu.edu
Location: Lecture: M R 12:45 PM - 2:00 PM 101 Osmond
Times: See your course schedule for times & locations
Start Date: 06/15/15
Course Credits: 4

Notes: The lecturer and your recitation TAs are your first point of contact for physics related questions. For any administrative questions, you should contact Dr. Kirstin Purdy Drew
krd15@psu.edu
123 Osmond Lab
863-6778

Required Text

The text for this course is Physics for Scientists and Engineers: A Strategic Approach by Knight, 3rd edition. Textbooks may be purchased either in the hard cover version or as a soft cover "split". The hardcover version contains all the material covered in Phys 211-212. The soft cover "split" is the custom edition available in the bookstore, which is bundled with the Mastering Physics online homework system described below.

In addition you are also required to have an i>clicker. These are available from the bookstore and elsewhere. Using your i>clicker in lecture is part of your grade. You can find out about obtaining and registering i>clickers on the ITS Clicker website. There is a link in the Lectures folder to directly register your clicker. If you do not register your clicker, then you cannot earn a lecture participation grade (3% of the total course grade).

Course Description

Calculus-based study of the basic concepts of mechanics: motion, force, Newton's laws, energy, collisions, and rotation.

Course Objectives

Upon completion of PHYS 211, students should be able to demonstrate a mastery of:
1. Relating position, velocity, acceleration and time using kinematics relationships
2. Using vectors
3. Forces and Newton’s Laws of Motion
4. Rotational Motion
5. Conservation laws
6. Oscillations and Waves
For a more detailed list of course objectives, please see the Exams folder.
Tentative Schedule

See the Calendar and the Lessons Tab for the schedule of readings, lecture topics, recitations and laboratories.

Exam Dates: MT1 (June 30, 2015), MT2 (July 24, 2015), Final Exam August 14, 2015

Course Requirements

You must be registered for both PHYS 211L (lecture) and PHYS 211R (lab/recitation) to earn a grade in this course.

Problem Set assignments – In general, there will be two problem set assignments per week. The due date and time for each assignment appears on MasteringPhysics. They will typically be due Tuesday and Friday evenings.

We will be using an online computer grading system called MasteringPhysics (http://www.pearsonmylabandmastering.com) to grade the homework (our course ID is purdydrew74935). Access to MasteringPhysics is provided in the PSU custom book in the bookstore. This system allows you to submit your homework at any time. Your grade on each assignment will be available immediately and, in most cases, you will have multiple tries to arrive at the correct answer. Any work done after the due date will not receive credit and no extensions will be given. Because problem sets are available at least a week before the due date and can be done in advance, NO excuses are allowed (see bottom of page for more info on excuse policy).

Students are encouraged to work together and collaborate on assignments. Work submitted for individual assessment must be the work of the individual student. Please refer to the Academic Integrity Policy below.

Course Prerequisites

Co-requisite: MATH 140

Grading Policy

Your grade in the course will be based on your performance in the labs, in recitation, on the problem set assignments, and on the exams with the following weights:

<table>
<thead>
<tr>
<th>Lecture Participation</th>
<th>Problem Sets</th>
<th>Recitation</th>
<th>Laboratories</th>
<th>Midterm 1</th>
<th>Midterm 2</th>
<th>Final</th>
</tr>
</thead>
<tbody>
<tr>
<td>3%</td>
<td>9%</td>
<td>9%</td>
<td>9%</td>
<td>20%</td>
<td>20%</td>
<td>30%</td>
</tr>
</tbody>
</table>

Final letter grades for the course will be based on an absolute scale. The course score will be rounded up to the nearest integer. No curving of any kind will be employed unless the combined average exam score (computed as the combined average of all midterm and final exams taken to date) is less than 70%. In such cases, the grades on the most recent exam will be adjusted by additively raising the exam scores to allow the combined exam average to meet the target minimum of 70%.

The break points for the various grade levels are:

<table>
<thead>
<tr>
<th>Grade Level</th>
<th>Grade Letter</th>
<th>Upper Limit</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>93% ≤</td>
<td>100%</td>
</tr>
<tr>
<td>A-</td>
<td>90% ≤</td>
<td>&lt; 93%</td>
</tr>
<tr>
<td>B+</td>
<td>87% ≤</td>
<td>&lt; 90%</td>
</tr>
<tr>
<td>Grade</td>
<td>Description</td>
<td></td>
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<tr>
<td>-------</td>
<td>-------------</td>
<td></td>
</tr>
<tr>
<td>83% ≤</td>
<td>B</td>
<td></td>
</tr>
<tr>
<td>80% ≤</td>
<td>B-</td>
<td></td>
</tr>
<tr>
<td>77% ≤</td>
<td>C+</td>
<td></td>
</tr>
<tr>
<td>70% ≤</td>
<td>C</td>
<td></td>
</tr>
<tr>
<td>60% ≤</td>
<td>D</td>
<td></td>
</tr>
<tr>
<td>0% ≤</td>
<td>F</td>
<td></td>
</tr>
</tbody>
</table>

Grades will be rounded up to the nearest integer at the end of the course.

You are responsible for verifying all of your scores (with the exception of the final exam score) before the final exam for the course.

Attendance Policy

Lecture

There will be two lectures a week, which will be used primarily to introduce principles and concepts. The pace will be very fast. We will be covering approximately one chapter per lecture. Thus missing one lecture amounts to missing an entire chapter of material. Attendance is strongly encouraged. Students should read the relevant material from the textbook before the lecture. Lecture will teach you how to think like a physicist, while recitation will teach you to solve problems. Both are important, and you can’t do one well without knowing how to do the other.

We will use i>clickers in class for three different types of questions in lecture: (1) reading quizzes at the beginning of each class (graded for correctness), (2) in-class concept questions designed to challenge your thinking (graded for effort), and (3) review of material covered to make sure everyone understands what we just discussed (graded for effort). You can find out about obtaining and registering i>clickers on the ITS Clicker website. When registering you must use your PSU email address (e.g., abc123@psu.edu) to register your clicker in order to receive credit. If you register through the link in Angel (in the Lectures folder) it will automatically register you correctly.

“Clicker questions” are generally multiple choice conceptual questions are designed to help identify common misconceptions and provide feedback during the class. They are designed to help you know when you understand the topic at hand, and your instructor to know when more discussion is needed and when to move on to the next topic.

Each lecture you will earn points based on your answers and your participation. The number of opportunities to earn points in this way is greater than the maximum number of points you can earn. For this reason, there will be no adjustments for forgetting to bring your clicker to lecture, and no extra-credit or make-up work for absences. If you fail to register your clicker in a timely manner, you will not get credit for lectures that occurred before you registered your clicker. If you get a new clicker during the semester, be sure to register it right away. To avoid accidentally swapping a clicker with another student, be sure to put your name or some other identifying feature on your clicker. You must attend your scheduled 211L section (participating in another lecture section will not contribute to your lecture participation grade).

Appropriate use of clickers by their owner during their class is an expectation of the course. Asking someone to use your clicker for you is asking that person to help you cheat. If someone asks you to use their clicker, that person is asking you to help them cheat. If you agree, you have helped them cheat. If
you observe someone is cheating - e.g., you see someone using two clickers - you are obligated to report it. If you do not, you are helping them to cheat. Please refer to the Academic Integrity Policy of this syllabus for more details.

**Laboratories**

Laboratory sections meet once a week in room 312 Osmond. Your meeting time is determined by your 211R section number. You must attend the laboratory section in which you are scheduled - no switching is permitted.

The experimental portion of the laboratories are designed to provide you with hands-on experience with the material being investigated in class. Teaching assistants lead the laboratory sessions and act as your guides as you explore the material. Students work collaboratively in three member lab groups to carry out the experiments. The lab activities will be posted on the course website. During the lab session, each group prepares a single write-up, addressing specific points of the experiments. This write-up must be submitted by the group before the end of the laboratory session. If a lab section is missed for a legitimate reason (see section below), it is your responsibility to promptly contact your teaching assistant (TA) and submit a Valid Excuse Form online (see the Valid Excuse Policy section of the syllabus).

**Recitation**

You must attend the section for which you are registered. Most of your exposure to problem solving will come through recitation, not through lecture. You will work on the recitation activities in groups of 3. Recitations will give you invaluable problem solving experience. During the summer session, there are more recitations, and they are longer in duration, than the regular semester, giving you more time to practice.

Attendance is mandatory for the whole recitation. If a recitation section is missed for a legitimate reason (see "Valid Excuse Policy" below), it is your responsibility to promptly contact your teaching assistant (TA) and submit a Valid Excuse Form online (see the Valid Excuse Policy section of the syllabus)

The recitation activities are available in the Recitations folder in Angel. While only one paper is turned in, every student needs to bring an individual copy of the pertinent activity to the recitation section.

**Exam Policy**

There will be two midterm exams and a final exam. All exams will be cumulative and closed book. Relevant physical constants and formulae will be provided for you. You may ONLY bring a standard scientific-type or graphing calculator, you may not use any programs on your calculator which are not manufacturer installed. Cellular phones, electronic organizers, tablet computers, any other electronic device or additional paper are not allowed.

The exams will be based on the assigned reading in the textbook, the material covered in lecture, the homework assignments, the recitations, and the laboratories. The exams will focus on material since the last exam but are cumulative. Please see the Course Content Objectives and the Exams folder in Angel for more information about the content assessed on the exams in this course.

**Academic Integrity**

As described in [The Penn State Principles](https://cms.psu.edu/section/syllabus/syllabus.asp), academic integrity is the basic guiding principle for all academic activity at Penn State University, allowing the pursuit of scholarly activity in an open, honest, and responsible manner. We expect that each student will practice integrity in regard to all academic assignments and will not tolerate or engage in acts of falsification, misrepresentation, or deception. To protect the fundamental ethical principles of the University community and the worth of work completed by others, we will record and report to the office of Judicial Affairs all instances of academic dishonesty.

The University and Departmental policy regarding academic integrity can be found on the course web
Disability Policy

Penn State welcomes students with disabilities into the University's educational programs. If you have a disability-related need for reasonable academic adjustments in this course, contact the Office for Disability Services (ODS) at 814-863-1807 (V/TTY). For further information regarding ODS, please visit the Office for Disability Services Web site at http://equity.psu.edu/ods/.

In order to receive consideration for course accommodations, you must contact ODS and provide documentation (see the documentation guidelines at http://equity.psu.edu/ods/guidelines/documentation-guidelines). If the documentation supports the need for academic adjustments, ODS will provide a letter identifying appropriate academic adjustments. Please share this letter and discuss the adjustments with your instructor as early in the course as possible. You must contact ODS and request academic adjustment letters at the beginning of each semester.

Miscellaneous

Excuse and Makeup policy

Laboratory and Recitation
The laboratory and recitation components of this course are structured around collaborative learning. You must be present in laboratory or recitation to do these assignments. If you are absent from a laboratory or recitation section with a valid excuse, as described under "Valid Excuse Policy", fill out the excuse form in Angel (in the Laboratories or Recitations folder) within one week of the absence. You will NOT be required to make up the missed activity. Your score for the missed activity will be recorded as a zero until an excuse form is filled and recorded. If you are absent without a valid excuse, a score of zero will be recorded for that assignment. If a student is more than ten minutes late to a lab, they cannot receive any credit for that period’s so be on time!

Students are NOT permitted to attend any laboratory or recitation section other than the one in which they are scheduled. Failure to attend the proper section could result in the loss of grade for that activity.

Problem Sets
You must complete the Problem sets as scheduled. The Problem sets are available early so no excuses are accepted. Even technical glitches are not valid excuses.

Examinations
All students should plan to take their exams at the scheduled times. Students can request conflict exams only by filling the conflict exam signup form in the Exams folder. In the case of sudden or unexpected events that will cause them to miss an exam, students are required to notify the course administrator prior to the exam or as soon as is reasonably possible.

Valid Excuse Policy

Valid reasons to be excused from an evaluative event (i.e. a graded class activity or a homework assignment) include illness or injury, family emergencies, university approved curricular and extracurricular activities, and religious holidays. Up to three (3) valid excuses will be accepted for a student throughout the entire course. More than three absences will interfere excessively with student learning. In extreme circumstances in which a student requires four or more absences to be excused, he or she must contact the course administrator directly to discuss the situation as soon as possible. Requests to be excused from a missed evaluative event due to reasons that are based on false claims is
 cheating and will be treated as described in the Academic Integrity Policy 49-20
http://science.psu.edu/current-students/Integrity/Policy.html.
* The student must provide all requested information on the Excuse Form and electronically sign the form. Incorrect or missing information will result in the request for an excused absence to be denied.
* Family emergencies include a death in the immediate family, death of a close friend, sudden hospitalization of a close family member, and events of similar gravity. Students should inform their appropriate teaching assistants about the family emergency as soon as possible.
* To obtain an excuse for university-approved curricular and extra-curricular activities, a student needs to obtain a letter (or a class absence form) from the unit or department sponsoring the activity. The letter must indicate the anticipated absence dates, and it must be submitted to the excuse submission dropbox along with the first excuse request before the first absence.
* In the case of religious holidays, students should submit the excuse request before the date of the absence.

Since University regulations require course instructors to make conflict exams available to students, missing a laboratory or recitation due to an examination in another course is not considered a valid excuse. You have one week from the absence to submit an excuse; otherwise it will be denied, barring extenuating circumstance (e.g., no access to the Internet due to reason for absence, such as an extended hospitalization).

Resources for Help

For help on physics outside of class, you should attend the Physics Department Learning Resource Center or the office hours of any teaching assistant for the course, not just your own. The course lecturer also has office hours. Links for these are in the "Resources" tab of Angel.

Announcements about the course will appear on Angel.

If you have any questions, please contact Angel Support.