Syllabus for PHYS 0175
Basic Physics for Science and Engineering 2
Spring 2018

Course Information

CRN     11093
Location Alumni Hall 343
Lecture Monday and Friday 8:00 – 8:50am, Wednesday 8:00 – 9:50am
Text    Fundamentals of Physics, 10th Custom Edition by Halliday, Resnick and Walker

Instructor Russell J. Clark, Ph.D.
Phone   412-624-9204
email   ruc2@pitt.edu
Office  OEH 404
Office hours Monday: 9:30am – 10:30am
                  Tuesday: 7:00am – 8:00am
                  Wednesday: 3:00pm – 4:00pm
                  Thursday: 3:00pm – 4:00pm
                  Friday: 11:00am – 12:00pm
Other times by appointment: http://tinyurl.com/Russell-Clark-Appointments

Course Description and Objectives

This course is the second half of a two semester, calculus based introductory physics course. The first half is Physics 0174, Basic Physics for Science and Engineering 1. You should have successfully completed Physics 0174 or its equivalent with a C or better before enrolling in this course. The goal of the course is to learn physics and to develop the skills of critical thinking and problem solving. In particular, you will learn to apply the principles of

- Electricity and magnetism
- Electronics (Ohm’s Law, resistors, capacitors, inductors)
- Electromagnetic induction
- Light and electromagnetic waves, Maxwell’s equations
- Reflection and refraction of light
- Interference of light

Physics 0175 has two components. The first is a lecture that meets in Alumni Hall 343. The second is a homework recitation that meets one hour per week and is taught by a graduate teaching assistant (TA). Attendance is mandatory in both the lectures and the recitations. Exams will be given during the lecture section according to the course schedule (below).

Text and Materials

The textbook for this course is Fundamentals of Physics, 10th Custom Edition by Halliday, Resnick and Walker and is available in the university book stores. In addition, you will need a scientific calculator with trigonometric, logarithmic and exponential functions.
## Important Dates:

<table>
<thead>
<tr>
<th>Month</th>
<th>Date</th>
<th>Day</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>January</td>
<td>8</td>
<td>Monday</td>
<td>First day of classes</td>
</tr>
<tr>
<td>January</td>
<td>15</td>
<td>Monday</td>
<td>Martin Luther King Jr. Day, no class or recitation</td>
</tr>
<tr>
<td>February</td>
<td>7</td>
<td>Wednesday</td>
<td>Exam 1</td>
</tr>
<tr>
<td>March</td>
<td>5-9</td>
<td>Monday-Friday</td>
<td>Spring Break, no classes or recitations</td>
</tr>
<tr>
<td>March</td>
<td>21</td>
<td>Wednesday</td>
<td>Exam 2</td>
</tr>
<tr>
<td>April</td>
<td>20</td>
<td>Friday</td>
<td>Last day of classes</td>
</tr>
<tr>
<td>April</td>
<td>23</td>
<td>Monday</td>
<td>Final Exam (8:00-9:50am)</td>
</tr>
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## Courseweb and Other Resources

The University of Pittsburgh provides a web based resource called *Courseweb*, which is a portal to web sites for individual courses. A *Courseweb* site for this course has been created and from there you may view announcements, send email to the instructor or the TAs, download course material such as the syllabus and lecture notes. You may also view your grades. To access *Courseweb* go to


Use your Pitt email username and password to login to *Courseweb*. If you have forgotten your username and password or need to set up an account, contact the help desk at 412-624-4357, or 4-HELP. Once you have logged into the system simply click on the link for this course to access the available material.

## Course Grades

Your grade in this course will be based on questions asked in the lecture, the homework assignments and exams. These grades will be weighted according to the table below.

<table>
<thead>
<tr>
<th>Component</th>
<th>Weight</th>
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</thead>
<tbody>
<tr>
<td>Recitation Quizzes</td>
<td>10%</td>
</tr>
<tr>
<td>Lecture Questions</td>
<td>10%</td>
</tr>
<tr>
<td>Homework</td>
<td>20%</td>
</tr>
<tr>
<td>Exam 1</td>
<td>20%</td>
</tr>
<tr>
<td>Exam 2</td>
<td>20%</td>
</tr>
<tr>
<td>Final Exam</td>
<td>20%</td>
</tr>
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</table>

**Recitation Quizzes:** A short multiple choice quiz will be given during most of the homework recitations. You may use your textbook or an equation sheet and will have approximately ten minutes to complete each quiz.

**Lecture Questions:** The lecture hall is equipped with a Student Interactive Response System (SRS) which consists of hand-held radio transmitters, called pads or clickers, used by the students to answer multiple choice questions. At the beginning of the semester you will be assigned a number that corresponds to a particular pad and you will use that pad throughout the semester. The pads will be stored in bins on a cart at the front of the room so that you may pick up your pad as you enter the hall and then place it back there at the end of the lecture. **Do not take your pad out of the classroom!** The pads are checked at the end of every lecture so we know the last person to use a pad should it turn up missing. The pads in the lecture hall will not work with other SPS systems on campus.
Please observe the following rules for the SRS:

1. Memorize your pad number and where it is located on the cart.
2. Pick up your pad as you enter the classroom.
3. If your pad is missing, check nearby bins as it may have been misplaced. If you still cannot find it then notify your instructor at the end of class.
4. **Do not pick up a pad that is not assigned to you or use more than one pad (such as when a friend is absent).**
5. Answer the multiple choice questions by pushing the appropriate key on your pad.
6. **Place the pad back in the proper bin at the end of lecture.** Form two lines, one on each side of the cart and use the color codes to identify the side of the cart where your bin is located.

During the lectures the instructor may pose one or more multiple choice questions. You will be given some time to think about each question and discuss it with your neighbors. During this time the SRS receiver will pick up all of the responses and tally the results. The questions are intended to motivate discussion with your peers and to provide the instructor with feed-back on how well you understand the material. You will receive full credit (100%) for each correct answer, 80% for each incorrect answer, and 0% for no response.

**Homework:** Problem solving skills are important to learning and understanding physics and so homework is an important part of this course. This course will employ the LON-CAPA online homework system:

http://homework.phyast.pitt.edu/

Even though your username for this system is the same as your Pitt email account, LON-CAPA is independent of the university computer system. Therefore your initial password will be your PeopleSoft number which is available through my.pitt.edu. If you have used LON-CAPA in a previous course, then your password is the same as it was before. If you have any trouble logging into the system then click “Forgot Password?” on the login screen and follow the instructions there. Please contact Dr. Clark or your TA if you have any questions about using the system.

Each problem in LON-CAPA is generated uniquely for each student in the course. Therefore the problems assigned to you will be similar, but not identical, to problems assigned to other students. Each problem has a discussion board and you are encouraged to use this feature to ask questions and offer insights to other students. The discussion boards will be monitored by Dr. Clark and the TA. **You MAY NOT post solutions to the problems on the discussion board!** Posting a solution to a problem will be considered an academic integrity violation and will result in disciplinary action.

A homework set will be assigned immediately after each lecture and it will be due at the start of the next lecture. No assignments will be due on the day of an exam. You will also turn in written, worked out solutions for each assignment in the next recitation after the due date.

**Exams:** There are two midterm exams and a final exam (see the schedule for the dates). Each exam, including the final, is worth 20% of the course grade.
Getting Help

The Department of Physics and Astronomy provides free assistance for all students. The Physics Help Room is staffed with TAs who can answer homework related questions, explain basic concepts and help you with the math. This is a free service and you are encouraged to use it. The Physics Help Room is located in Thaw 312 (https://physicsandastronomy.pitt.edu/resource-room).

Peer assistance is available from undergraduate teaching assistants (UTAs) in the UTA Help Room for this course (http://www.physicsandastronomy.pitt.edu/uta-help-room-304-oeh).

In addition, tutoring may be available through the A&S Connected Community (http://www.asundergrad.pitt.edu/connected-community).

Grade Change Policy

Grade cutoffs are chosen to be as fair as possible but ultimately the line has to be drawn somewhere and it has to be drawn straight. Extra credit opportunities will not be offered to individual students. Once your final grade for the semester has been submitted to the Registrar it will not be changed unless there is a verifiable error in the grade book, such as a missing grade or a grade that was entered incorrectly. You can check all of your course grades at any time on Courseweb (http://courseweb.pitt.edu).

Academic Integrity

All students are expected to adhere to the standards of academic honesty. Any student engaged in cheating, plagiarism, or other acts of academic dishonesty would be subject to disciplinary action. Any student suspected of violating this obligation for any reason during the semester will be required to participate in the procedural process, initiated at the instructor level, as outlined in the University Guidelines on Academic Integrity (http://www.provost.pitt.edu/info/acguidelinespdf.pdf). This may include, but is not limited to the confiscation of the examination of any individual suspected of violating the University Policy.

Disability Services

If you have a disability for which you are or may be requesting an accommodation, you are encouraged to contact both your instructor and Disability Resources and Services, 216 William Pitt Union, (412) 648-7890/(412) 383-7355 (ITY), as early as possible in the term, DRS will verify your disability and determine reasonable accommodations for this course.

Statement on Classroom Recording

To ensure the free and open discussion of ideas, students may not record classroom lectures, discussion and/or activities without the advance written permission of the instructor, and any such recording properly approved in advance can be used solely for the student’s own private use.