

# Syllabus for PHYS 0174

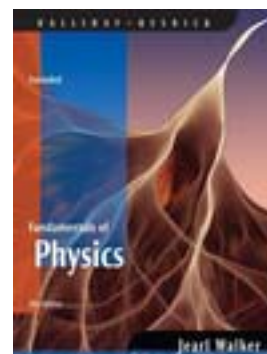
## Basic Physics for Science and Engineering 1

### Fall 2008

#### Course Information

CRN 13496  
Location Alumni Hall 343  
Lecture Monday, Wednesday and Friday 3:00 – 3:50 pm  
Text *Fundamentals of Physics, 8<sup>th</sup> Edition* by Halliday, Resnick and Walker

Instructor Russell J. Clark, Ph.D.  
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Office OEH 404  
Office hours Monday, Wednesday and Friday: 12:00pm-2:00pm  
Tuesday and Thursday: 2:00pm-4:00pm  
Other times by appointment.



#### Course Description and Objectives

This course is the first half of a two semester, calculus based introductory physics sequence. The second half is Physics 0175, *Basic Physics for Science and Engineering 2*. The goal of this 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

- Measurement and vectors
- Motion in one dimension
- Motion in three dimensions
- Newton's Three Laws of Motion
- Newton's Law of Gravitation
- Work and Conservation of Energy
- Linear Momentum
- Rotational Motion
- Simple Harmonic Motion and Waves
- Thermodynamics

Physics 0174 has three components. The first is a lecture that meets on Mondays, Wednesdays and Fridays from 3:00 to 3:50 pm in Alumni Hall 343. The second is a homework recitation that meets one hour per week and is taught by one of the Teaching Assistants (TA). In the homework recitation you will discuss the current or next homework assignment. The third component is a computer recitation in GSCC 138. Attendance is mandatory in all three components. 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, 8<sup>th</sup> 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.

## 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 materials such as the syllabus and view your grades. To access *Courseweb* go to

<http://Courseweb.pitt.edu/>.

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.

The Department of Physics and Astronomy provides free assistance for all students. The **Physics Exploration Center** allows students to operate some simple experiments and demonstrations. Within the Exploration Center is the **Physics Help Room** 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 Exploration Center and the Physics Help Room are both located in Thaw 312. In addition, tutoring is available through the Academic Resource Center located in GSCC (<http://www.as.pitt.edu>).

## Course Schedule

### Important Dates:

Month	Date	Day	
August	25	Monday	First day of class
September	1	Monday	Labor Day – no class
<b>September</b>	<b>19</b>	<b>Friday</b>	<b>Exam 1</b>
October	3	Friday	Class meets in Auditorium 6, Scaife Hall
October	13	Monday	Fall Break – Monday classes meet on Tuesday
<b>October</b>	<b>17</b>	<b>Friday</b>	<b>Exam 2</b>
<b>November</b>	<b>14</b>	<b>Friday</b>	<b>Exam 3</b>
November	26-28		Thanksgiving Break – no class
December	5	Friday	Last day of class
<b>December</b>	<b>12</b>	<b>Friday</b>	<b>Final Exam – 2:00pm to 3:50pm</b>



## Class times

Group (CRN)	Monday 2-2:50pm	Monday 3-3:50pm	Wednesday 2-2:50pm	Wednesday 3-3:50pm	Friday 2-2:50pm	Friday 3-3:50pm
14600	GSCC 138	ALUM 343	Thaw 102	ALUM 343		ALUM 343
14274	GSCC 138				Thaw 102	
13918	Thaw 102		GSCC 138			
14602			GSCC 138		Thaw 11	

## Course Grades

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

Lecture Questions	5%
Quiz	5%
Recitation Assignments	10%
Homework	20%
Exam 1	12%
Exam 2	12%
Exam 3	12%
<u>Final Exam</u>	<u>24%</u>

**Lecture Questions:** Alumni Hall 343 is equipped with a Student Interactive Response System (SRS). The system consists of hand-held infrared transmitters, called pads, used by the students and a set of central receivers that read their signals. At the beginning of the semester you will be assigned a number that corresponds to a particular pad. 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. The bins are color coded so that you may quickly identify the location on the cart for your pad. **Do not take your pad out of the classroom!** Many other classes use the same system and pads and if a pad is missing the SRS system makes it easy to identify the student who used it last. The pads in Thaw 104 will not work with other SPS systems on campus.

Please observe the following rules for the SRS:

1. Memorize your pad number, the color of the bin and the cart where it is located.
2. Pick up your pad as you enter the classroom.
3. If your pad is missing, check nearby bins and bins of the same color as it may have been misplaced. If you still cannot find it, ask Dr. Clark which pad you may use as an alternate.
4. There are multiple receivers in the hall, aim your pad at the one with the clearest line of sight. A red light will flash on the receiver when it receives your answer and your pad number will change color on the computer screen. You may change your answer anytime.

the question is open by simply pushing a different key (A to F). The G and H keys are not used.

5. **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 lecture Dr. Clark will pose one or more multiple choice questions that you will answer with your individual pad. You will be given one or two minutes to think about each question and discuss it with your neighbor. During this time the SRS receiver will pick up all the signals and tally the results. At the end of the time the answers from each student will be recorded and a summary of final results displayed. The questions are intended to motivate discussion with your peers and to provide Dr. Clark with feed-back on how well you understand the material. You will receive full credit (100%) for each question you answer correctly and 90% for each question you answer incorrectly. Failure to answer a question at all results in no credit (0%), so it pays to answer the question even if you get it wrong.

**Exams:** There are three exams during the semester (see the schedule for the dates) worth 20% of the final grade each.

**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. The address is:

<http://nplq1.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](http://my.pitt.edu). If you have used LON-CAPA in a previous course, then your password will remain the same. Separate instructions on how to use the system will be provided.

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 on the discussion board will result in disciplinary action.**

A homework set will be due at the start of each lecture session and Dr. Clark will work one of the assigned problems that were due at the start of class. No assignments will be due on the day of an exam. You will also turn in written, worked out solutions for these problems for additional credit.

If you have any questions about the homework problems then contact your TA or Dr. Clark. You may also find help in the Physics Help Room (Thaw 312) and at the Academic Support Center (WPU 311).

## **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 may be offered to the class as a whole but not 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/>).

## **Students with Disabilities**

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 (TTY), as early as possible in the term. DRS will verify your disability and determine reasonable accommodations for this course. A comprehensive description of the services of that office can be obtained at:

<http://www.drs.pitt.edu>

## **Academic Resource Center (ARC)**

The Academic Resource Center (ARC) provides tutorial services in specific Arts and Science courses.

The fall 2091 Tutorial Schedule includes:

Physics 0110, 0111, 0174;  
Biological Science 0150 and 0160;  
Statistics 0200, 0800, 1000, 1100;  
Chemistry 0110, 0120, 0310 and 0320;  
Neuroscience 0080; 0081;  
Economics 0100, 0110;  
Spanish 1 and 2;  
French 1 and 2;  
Psychology 0010, 0035, 0105, 0310, and  
Computer Science 0131.

Study Skill Workshops are also provided and will highlight skills specific to studying, test taking, note taking, time management and more.

Tuesdays @ Noon: Survival Workshop Series, CL 239, open to all students.

Students who would like one-on-one or group tutorial assistance should call the ARC: 412-648-7920 to check tutor availability and schedule an appointment. For a full listing of courses and workshops, visit: [calendarwiz.com/arcservices](http://calendarwiz.com/arcservices)