

## Syllabus for Phys 0091 Conceptual Physics Spring 2017

### Course Information:

Location	102 Thaw Hall
Lecture	Monday and Friday 8:30 – 9:50
Text	<i>Conceptual Physics, 12<sup>th</sup> Edition</i> by Hewitt
Homework	Online using WebAssign, cost \$29.95
Professor	Adam Leibovich
Contact info	Phone: 4-6381, email <a href="mailto:akl2@pitt.edu">akl2@pitt.edu</a>
Office	414 Allen Hall
Office hours	Wednesday 9:00-11:00 and Thursday 2:00-4:00, or by appointment

**Course Description and Objectives:** This course presents the conceptual basics of introductory classical physics. As such, this course covers the same general topics as PHYS 0110. The emphasis of this course, however, is on a clear understanding of the underlying principles of physics, with a reduced emphasis on mathematics than would be used in PHYS 0110. This course is intended for non-science majors and for students from the School of Health and Rehabilitation Sciences. The mathematical level of this course will not be adequate for those students who plan to apply to Medical School. It could be used for those students as a preparatory course prior to tackling the more mathematically rigorous PHYS 0110 or PHYS 0174. In that case credit would not be given for both this course and either PHYS 0110 or 0174. Topics covered in Physics 0110 include: kinematics; Newton's Laws of Motion; conservation of total mechanical energy, total linear momentum, and total angular momentum; rotational kinematics and dynamics; simple harmonic motion; behavior of fluids; heat and heat transfer; mechanical waves and sound.

By the end of this course, the successful student will be able to:

- Demonstrate conceptual understanding of the concepts, principles and laws of physics covered in this course, which include: kinematics; Newton's Laws of Motion; conservation of total mechanical energy, total linear momentum, and total angular momentum; rotational kinematics and dynamics; simple harmonic motion; behavior of fluids; heat and heat transfer; mechanical waves and sound.
- Describe a physical situation, as necessary, using multiple representations such as written conceptual statements, mathematical equations, diagrams, and graphs, and be able to translate from one representation to another.
- Perform a conceptual analysis of a problem and identify physical principles required for its solution.
- Translate physical principles to formulate necessary mathematical statements required to solve a problem.

**Course Prerequisites:** Satisfactory passage of the Mathematical Proficiency Placement test given to incoming freshman, or completion of recommended remedial courses

**Text and Materials:** The textbook for this course is *Conceptual Physics, 12<sup>th</sup> Edition* by Hewitt and is available in the university bookstores. You will also need to buy access to WebAssign, the online homework system. In addition, you will need a calculator.

**CourseWeb:** A CourseWeb site for this course has been created and from there you may view announcements, send email to the instructor and download course material (such as the syllabus and lecture notes). To access the CourseWeb site, go to <http://courseweb.pitt.edu> and login using your Pitt email username and password.

**Class Participation:** I encourage you to participate fully in class discussions. Physics ideas build on previous material, so it is important to understand what is being taught each step of the way. I strongly encourage you to ask questions to clarify any doubts. There is no such thing as a dumb question. Chances are, if you are confused, someone else in the class is also confused, which means that I did not do a good enough job explaining something. Please stop me when this happens, so I can try again.

The Department of Physics and Astronomy has purchased a Student Interactive Response System (SRS) for 102 Thaw Hall. The system consists of hand-held remote controls (clickers) for every student, which is read by receivers in the room. The system will allow me to ask questions during the lecture and let you respond anonymously. At the beginning of the semester, you will be assigned a number that corresponds to a particular clicker. The clickers will be stored in two carts at the front of the room, so that you may pick up your clicker as you enter the hall, and return it when you leave. **Don't forget to return the clicker, since other classes will also be using the system!** The questions you answer during class will count for extra credit at the end of the semester (possible 2% added to your final average). Most of the credit (80%) will be given for supplying an answer, even if incorrect. The rest of the credit (20%) will be for having the correct answer.

**Study Resources:** A Resource Room will be available throughout the semester for help in understanding physics concepts and completing homework assignments. The room is usually available from 9 am to 5pm, Monday through Friday, in room 312 Thaw Hall. Please check the schedule at <http://www.physicsandastronomy.pitt.edu/resource-room>. In addition, tutoring is available through the Academic Resource Center in Gardner Steel <http://www.asundergrad.pitt.edu/arc>.

**Homework:** Problem-solving skills are important to learning and understanding physics and so homework is an important part of the course. This course will employ the WebAssign online homework system. The address is: <https://webassign.com>. You will have to purchase an access code to use the system. When prompted, use the Class Key pitt 2170 6672. Homework will be due at Fridays at 6:00 pm.

**Exams:** There will be **two** mid-term exams (in lecture) and a 1 hour 50 min cumulative final examination. The exams are expected to fall on:

- Exam 1: Friday, Feb. 3
- Exam 2: Friday, Mar. 24
- Final: Wednesday, Apr. 26 from 12:00 – 1:50

The final exam room will be announced at a later date.

**Course Grades:** Your grade in the course will be based on homework and exams. The grades will be weighted according to the table below:

Homework	15%
Midterm Exams	25% each
Final Exam	35%

Extra credit is available from the in-class SRS questions can give a total of 2% added into the final grade. Homework will be due at Fridays at 6:00 pm, except for HW #0 (2 parts), due Monday, Jan 9<sup>th</sup> at 6:00 pm.

**Important dates:**

January 4 <sup>th</sup>	First day of classes
January 16 <sup>th</sup>	No class – MLK day
January 18 <sup>th</sup>	Add/drop period ends
February 3 <sup>rd</sup>	First midterm exam
March 5 <sup>th</sup> -12 <sup>th</sup>	No classes – Spring recess
March 15 <sup>th</sup>	Last day to withdraw
March 24 <sup>th</sup>	Third midterm exam
April 21 <sup>th</sup>	Last day of classes
April 26 <sup>th</sup>	Final exam

**Course schedule:** The schedule (subject to change) lists the material covered and exam dates. You are responsible for reading the chapter in the text **BEFORE** coming to class.

Week	Due	Monday	Friday
1/2/17			Chapter 1
1/9/17	HW #0, HW #1	Chapter 1,2	Chapter 2
1/16/17	HW #2	No class - MLK	Chapter 3
1/23/17	HW #3	Chapters 4	Chapter 5
1/30/17	-	Chapter 6	Midterm 1
2/6/17	HW #4	Chapter 6,7	Chapter 7
2/13/17	HW #5	Chapter 8	Chapter 8
2/20/17	HW #6	Chapter 9	Chapters 10
2/27/17	HW #7	Chapter 12	Chapters 13
3/6/17	-	No class - Spring break	
3/13/17	HW #8	Chapter 13,14	Chapters 14,15
3/20/17	-	Chapter 15	Midterm 2
3/27/17	HW #9	Chapter 16	Chapter 17
4/3/17	HW #10	Chapter 19	Chapter 19
4/10/17	HW #11	Chapter 20	Chapter 20
4/17/17	HW #12	Chapter 21	Chapter 21

## **Course policies:**

### **Late work and exam conflicts:**

Students may obtain an excused absence, and special arrangements may be made if a student is unable to participate in a course requirement (e.g., an exam) for good cause, such as illness or other serious circumstance beyond a student's control and preventing participation. In the occurrence of such good cause, the student must inform the instructor immediately (prior notice is required if the reason of absence is a scheduled event, such as a university sports competition). The instructor may request documentation regarding the circumstances.

In general, late homework submissions will not be accepted. If a student is unable to complete a homework assignment for good cause and provides proper notice, this particular homework assignment may not be counted towards the student's final grade.

Special or make-up examinations may be given in the case of an excused absence. A student's failure to take a scheduled examination without good cause and without proper notice will result in that student's receiving a 0% grade for that exam.

### **Academic integrity:**

Students in this course will be expected to comply with the [University of Pittsburgh's Policy on Academic Integrity](#). 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. This may include, but is not limited to, the confiscation of the examination of any individual suspected of violating University Policy. Furthermore, no student may bring any unauthorized materials to an exam, including dictionaries and programmable calculators.

### **Disability resources:**

If you have a disability that requires special testing accommodations or other classroom modifications, you need to notify both the instructor and the [Disability Resources and Services](#) no later than the 2nd week of the term. You may be asked to provide documentation of your disability to determine the appropriateness of accommodations. To notify Disability Resources and Services, call 648-7890 (Voice or TTD) to schedule an appointment. The Office is located in 216 William Pitt Union.