University of Pittsburgh · Department of Physics &Astronomy

Introduction to Physics 2, Physics 0111 - Section 1200 (10096 evening)

Spring Term 2024

Official website of the course: http://canvas.pitt.edu
(login using your Pitt username and password)

Table of Contents

Instructor and TAs:

- *Instructor:* Prof. W. Vincent Liu
- *Office:* 223 Allen Hall or Zoom
- *E-mail: BEST WAY TO CONTACT ME* liu.phyclass@gmail.com
  - **Important Notice on Email:** Emails sent to any *other accounts* may be *delayed or lost* due to spam filtering; send at your own risk.
- *Phone:* (412) 624-9023
- *Office hours:* See Course Canvas
- *Teaching Assistants/Graders:*
  - Mahdi Sedighi Jafari <mas1371@pitt.edu>
  - Office hours: See Course Canvas

Textbook, Course Description and Objectives

Text: College Physics by OpenStax. Available online for free or in the University bookstores.

This course is the second half of a two-semester introductory physics course for non-majors. The major goal of this physics course is to enable you to develop logical reasoning skills, to explain or predict diverse phenomena in everyday experience, and to become good problem solvers and independent thinkers.

In this course we will cover most of Chapters 13, 15, 18-27, and 29-30, which includes material on Thermodynamics, Electricity and Magnetism, Optics, Quantum Physics, and Atomic Physics. It is highly recommended that you read the relevant chapter ahead of time. The lecture material will follow the text fairly closely, and many of the assignments will be drawn from the text. You are encouraged to purchase the text or have regular access to it. There will be a copy (or copies) on reserve in the Benedum Engineering Library.

Physics 0111 has two components. The first is the lecture. The second is a smaller recitation section that meets one hour per week, taught by one of our TAs. In recitation you will take a short quiz and discuss physics and the homework.

Prerequisites: Mathematics

Mathematics is the language of physics. While this course will not require knowledge of calculus, it will require skills in algebra, trigonometry and simple geometry. Appendices of the text will help you brush up on some techniques and definitions.

Class Participation (Peer Instruction)

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 having trouble understanding a concept, others are also likely struggling with the same concept. Please stop me when this happens, so I can try again.

SRS Clickers. The Department of Physics and Astronomy has purchased a Student Interactive Response System (SRS). 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 pad. The pads will be stored in two carts at the front of the room, so that you may pick up your pad as you enter the hall, and return it when you leave. Don't forget to return the pad, 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 (see Grading Policy). 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.

Class Etiquette

I assume that those who attend lecture will respect me as well as their classmates, and refrain from distracting activities during the lecture. These include: (1) talking (except during Class Participation, when talking is encouraged), (2) use of cellular phones (ringers should be turned off), (3) other distracting activities, such as newspaper rustling, video games, etc.

Asking a question during class is encouraged, and is not considered a distraction.

Study Resources

A Resource Room will be available throughout the semester for help in understanding physics concepts and completing homework assignments. The room is available from 9am to 5pm, Monday through Friday in room 312 Thaw Hall during University normal operation. Please check the Resource Room schedule. In addition, tutoring is available through the Academic Support Center (WPU 311). The OpenStax website is another place to look for extra study resources.

Homework

Homework is an important part of the course. This course will employ the Macmillan Achieve online homework system.

To register for Physics 0111 with Achieve online:

- Start from http://canvas.pitt.edu
- Enter our courseweb "2244 PHYS 0111 SEC1200"
- Look for "Macmillan Learning" in Navigation
- Click "Achieve" above "Access the Achieve homepage"
- Once in Achieve, check you are in the right course "**PHYS 0111 - S24 - LIU [Sec 1200]**". [Attention: please note there are several "Phys 0111" sections]
- You then have three options:
  - A. Purchase Access Online: Select the access period you want to buy. Add it to your cart. Create an account. Follow the check-out process.
  - B. Start a Grace Period: You can get 14 days of free access. Select this, create an account, and you're in. You will need to purchase long-term access in order to use the product beyond the 14 days.
  - C. Already have a code: Simply enter in the code you have either purchased or received. Create an account and you're in.
- For "Student ID" entry, enter your Pitt **PeopleSoft 7-digit ID number**.

Payment: Upon negotiation, Achieve has kindly agreed to offer our students with a best price available (check it out online there yourself!). For detailed help on registration and other Achieve aspects, go to:

Achieve Support

Homework assignments will be completed on Achieve and no paper copies will be accepted. Each problem may be generated uniquely for each student in the course. Therefore, the problems assigned to you will be similar, but not necessarily identical, to problems assigned to other students.

Homework questions and requests: *please direct to Instructor/TA office hours or send by email* (see "Instructor and TAs" for information). Questions or requests posted on the website (in any form!) will *not* be answered! *We do not use Achieve or Canvas websites for communication.*

Solutions to the homework problems will be available online at Achieve after the due dates.

Exam

There will be three mid-term exams (in class) and no final examination. The exams are set on:

- Midterm Exam 1: Tuesday, Feb 6, Room: our classroom
- Midterm Exam 2: Tuesday, Mar 5, Room: our classroom
- Midterm Exam 3: Thursday, Apr 18, Room: our classroom
- Final: no final exam

All midterm exams will be held during the regular class meeting time in the regular lecture room unless otherwise announced. The lowest performance of the three midterm exams will be dropped. An absent exam receives zero points and will be

effectively dropped out. There will be no make-up midterm examinations under any circumstance (sorry, no exceptions).

For each exam, you will be allowed to prepare in advance and use during the exam one summary sheet of handwritten or typed formulas on both sides [double sided, single page of the standard letter paper size]. Creating such a summary sheet is part of active training; it should help you to well organize physics key concepts in your mind.

Recitation and Quizzes

The recitation sections are mandatory. It is important for you to attend the recitation that was originally assigned to you. Your TA will discuss problem solving strategies and will also give in-class quizzes most weeks. The times/rooms are given on the University's course schedule, copied below for your quick reference.

Time	Location	TA
Tue 5:00-5:50 pm	343 Alumni	Mahdi Sedighi Jafari
Tue 7:30-8:15 pm	343 Alumni	Mahdi Sedighi Jafari
Thu 5:00-5:50 pm	343 Alumni	Mahdi Sedighi Jafari
Thu 7:30-8:15 pm	343 Alumni	Mahdi Sedighi Jafari

Grading Policy

The course grade will be based on: *homework (20%), two highest midterm exams (30% each), the recitation quiz (20%), and no final exam (0%)*, where the lowest of the three midterm exams and the lowest quiz are dropped. Extra credit is available. The in-class SRS (*clicker*) questions will count for a total of 2.5% as extra credit added into the final grade.

Letter grade boundaries: The letter grade cutoffs will be calculated and curved uniformly--- based on the statistics of this class and the previous similar courses --- at the very end of the term. Here let me outline a general scheme (tentative): a total score around 93% is a probable cutoff for an A; a total score around 85% for a B; a total score around 70% for a C; less than around 50% will be most probably converted to below D. Final grade will be determined by your total weighted performance score according to the final letter grade boundaries for the entire class.

Late and Absent Assignments. We do NOT accept late homework assignments, NOR provide makeup exams, quizzes, or SRS in-class questions, unless there is a special, strong, justifiable reason (such as athletes going out for games on behalf of the University, being in emergency room during the recitation time with hospital evidence, or a case as strong).

Course schedule (tentative)

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

Week of	Due	Tuesday	Thursday
Jan 8	Practice HW	Ch 13	Ch 13, 15
Jan 15	HW1, QZ1	Ch 15	Ch 15
Jan 22	HW2, QZ2	Ch 18	Ch 18
Jan 29	HW3, QZ3	Ch 18, 19	Ch 19, 20
Feb 5	HW4 (short)	Midterm Exam 1	Ch 20
Feb 12	HW5, QZ4	Ch 21	Ch 21
Feb 19	HW6, QZ5	Ch 22	Ch 22
Feb 26	HW7, QZ6	Ch 23	Ch 23
Mar 4	HW8 (short)	Midterm Exam 2	Ch 23, 24
Mar 11		Spring break	Spring break
Mar 18	HW9, QZ7	Ch 24	Ch 24, 25

Mar 25	HW10, QZ8	Ch 25	Ch 25
Apr 1	HW11, QZ9	Ch 26	Ch 26, 27
Apr 8	HW12, QZ10	Ch 27	Ch 29, 30
Apr 15	HW13	Ch 30, overall review	Midterm Exam 3
Apr 22	no final exam		

Homework (HW) will be **due at 11:30 pm on Thursdays** unless otherwise noted. *Chapter (Ch.) numbers are from the textbook.*

Academic Integrity

“Students in this course will be expected to comply with 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.”

Disabilities

"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."

If you have any questions, please contact me at: liu.phyclass@gmail.com.