

[University of Pittsburgh](#) · [Department of Physics & Astronomy](#)

## Introduction to Physics 2, Physics 0111 - Section 1200 (10121 evening) Spring Term 2020

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

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### Instructor and TAs:

- *Instructor:* Prof. W. Vincent Liu
- *Office:* 223 Allen Hall
- *E-mail:* BEST WAY TO CONTACT ME [liu.phyclass@gmail.com](mailto: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 CourseWeb
- *Teaching Assistants/Graders:*
  - Motasem ElGamel ([moe13@pitt.edu](mailto:moe13@pitt.edu)).
    - Office hours: See CourseWeb

### 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, 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. 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 (<http://www.wiley.com/college/cutnell>).

## Physics Exploration Center (PEC)

For a good understanding of physics concepts learned during the lectures, you are encouraged to take advantage of our [Physics Exploration Center](#) (PEC). PEC is a learning center (located in 311/312 Thaw Hall) where lecture demonstrations have been modified and turned into small experiments for you to explore. Concrete experiences provided by the hands-on activities are very important for conceptual understanding of physical phenomena. The PEC is typically open from 9am-4pm M-F when you can do your assignment, but you should check the [resource room schedule](#) to make sure that a TA is available (the PEC is only open under TA supervision).

See the [Course Schedule](#) for the **optional** PEC assignments and **due dates**.

**NOTE:** The PEC assignments are not necessarily given in numerical order. You will not be formally graded for the PEC assignments, but they will count for extra credit (see [Grading Policy](#) for details) and you are strongly encouraged to check them out. Each PEC will be available for a week.

## Homework

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

To register for Physics 0111 with Sapling:

- Go to <http://www.saplinglearning.com/login> to log in or create an account.
- Under Enroll in a new course, you should see Courses at [University of Pittsburgh]. Click to expand this list and see courses arranged by subject.
- Click on the subject "Physics" to see the terms that courses are available (note that Semester 1 refers to the first course in a sequence and not necessarily the first term of the academic year).
- Look for the course "**PHYS 0111 - Spring20 - LIU**".
- For "Student ID" entry, enter your Pitt **PeopleSoft 7-digit ID number**.

Payment: Upon negotiation, Sapling 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 Sapling aspects, go to:

[Sapling Learning Help for Students](#)

Homework assignments will be completed on Sapling 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.

Students are advised not to post any physics questions nor any requests for late homework or deadline change on Sapling website. Please bring your physics questions to office hours. The "Forum" on Sapling will not be answered!

Solutions to the homework problems will be posted online at the University's CourseWeb after the due dates. Please allow up to a week for the TAs to write them up.

## Exam

There will be three mid-term exams (in class) and a 1 hour 50 min cumulative final examination. The exams are set on:

- Midterm Exam 1: Thursday, Jan 30, Room: TBA
- Midterm Exam 2: Thursday, Feb 27, Room: TBA
- Midterm Exam 3: Thursday, Apr 2, Room: TBA
- Final: Thursday, Apr 23, 6:00-7:50pm, Room: TBA

The final examination is scheduled by the University; the exam time is taken from the official University "[Classroom Scheduling/Final Exams](#)". The final exam location will be determined sometime during the semester. 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]. The very act of creating such a summary sheet should help you to organize 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	11 Thaw	Han QIN
Tue 5:00-5:50 pm	343 Alumni	Motasem ElGamel
Tue 7:30-8:15 pm	343 Alumni	Motasem ElGamel
Thu 5:00-5:50 pm	343 Alumni	Motasem ElGamel
Thu 7:30-8:15 pm	343 Alumni	Motasem ElGamel

## Grading Policy

Over the course of the semester, there will be opportunities for receiving extra credit (XCRED). One XCRED will be worth 0.25% in the final course grade, and these optional assignments are meant to enhance the learning experience.

The course grade will be based on: *homework (20%), two midterm exams (20% each), the final exam (30%), and the recitation quiz (10%)*, where the lowest of the three midterm exams and the lowest quiz are dropped. Extra credit is available. Each of the PECs will count for up to one XCRED (0.25%), and the in-class SRS (*clicker*) questions will count for a total of ten XCREDs (2.5%) added into the final grade.

**Late and Absent Assignments:** We do not accept late homework and PEC assignments nor makeup quizzes and SRS in-class

questions/participations 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 6	Practice HW	Ch 13	Ch 13, 15
Jan 13	HW1, PEC-110_15	Ch 15	Ch 15, 18
Jan 20	HW2	Ch 18	Ch 18, 19
Jan 27	PEC5	Ch 19	Midterm Exam 1
Feb 3	HW3	Ch 19,20	Ch 20, 21
Feb 10	HW4, PEC7	Ch 21	Ch 22
Feb 17	HW5	Ch 22	Ch 22, 23
Feb 24	PEC10	Ch 23	Midterm Exam 2
Mar 2	HW6, PEC15	Ch 23	Ch 24
Mar 9		Spring break	Spring break
Mar 16	HW7	Ch 25	Ch 25, 26
Mar 23	HW8, PEC18	Ch 26	Ch 26, 27
Mar 30	HW9 ( <i>due Friday</i> )	Ch 27	Midterm Exam 3
Apr 6	HW10, PEC4	Ch 27, 29	Ch 29, 30
Apr 13	HW11, PEC19	Ch 30	Ch 30, overall review
Apr 20	final exam week		

Homework (HW) will be **due at 11:30 pm on Thursdays** unless otherwise noted. The optional **PECs are due in recitation** on the week shown above. (*Important: you must turn in PECs in the recitation you are registered for to get credit.*) They will be available the week before in 312 Thaw Hall. *PEC numbers are from the [list of PEC experiments](#). 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](mailto:liu.phyclass@gmail.com).