

Phys 0175
Fall 2019

Lecture: MF 8:00-8:50 AM; W 8:00-9:50 AM
Lecture Hall: 343 Alumni Hall

GENERAL REMARKS:

This is the second term of the introductory physics sequence PHYS 0174-0175. The lectures are based on the 11th edition of Holliday, Resnick, and Walker's textbook, Fundamentals of Physics but the 10th edition will work just fine. We begin with Chapter 21 and end with Chapter 36. These chapters cover a wide range of physical phenomena relating to electricity and magnetism (E&M). The subject can be divided into two major parts: statics and dynamics. In the former case, we investigate how static electric charges interact with each other (Coulomb's law), and how electric and electric potential fields look like for different distribution of charges. In the latter case, we study charges that are in motion, creating electric currents, magnetic fields, and waves. The entire subject can be summarized concisely by the Maxwell's equations, which is Chapter 32. At a practical level, knowledge of electricity and magnetism helps us understand how electronic circuits work, and how light propagates in space, and how it interacts with matters. If time permits, we will briefly present Einstein's special theory of relativity (Chapter 37) and make connections with E&M theory in early chapters. Einstein's theory fundamentally changed our view on simple concepts such as space and time.

Since altogether there are 16 chapters, neglecting Chapter 37, more than one chapter will be covered per week. It is a considerable amount of work in terms of reading, understanding, and exercising. In order not to fall behind, you must work diligently and seek help if needed. All exams are closed-book exams, but you are allowed to bring a double-sided formula sheet for each midterm and three double-sided formula sheets for the final.

EXAMS AND GRADING:

There will be two midterm exams and a cumulative final exam. Your grade will be determined primarily based on these three exams. Unless there is a legitimate reason, which must be communicated to me beforehand, there will be no make-up exams.

We will use the on-line homework management system, WileyPlus, for this class. I hope that most students are already familiar with the system. If you are not, please come

see me or TA for help. To use the WileyPlus, you log into the CourseWeb and click on WileyPlus listed on the left blue panel. There you will see the assignment (HW1) for the first week. There are many resources available within WileyPlus, including the textbook.

We will assign homework once a week on Monday. The deadline for each assignment is the opening hour of the Friday lecture the week after. You should attempt all the problems assigned. To help you develop problem-solving skills, there is also a recitation class each week. This is an occasion when you can ask many questions, and your TA will demonstrate and help you solve some problems that you consider “tough”. As Prof. Russell Clark correctly put it, “one cannot play a violin just by watching someone doing it. You have to play and practice yourself.” Thus, if you want to do well in this class, practicing and working out the assigned homework each week is the very minimum that you must do. Short quizzes will be given in the recitation classes and will contribute to your final grade. Altogether, the two midterms count for 20% each, the final 30%, the HW 10%, the quizzes 10%, and class attendance 10% towards your final grade.

Note: the homework, the recitation classes, and the quizzes are not insignificant. Together they are more than one midterm and are equivalent to the final. It is the determining factor for the borderline cases.

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.

Disabilities:

If you have a disability for which you are or may be requesting an accommodation, you are encouraged to contact your instructor and Disability Resources and Services (DRS), 140 William Pitt Union, (412) 648-7890 / (412) 383-7355 (TTY), as early as possible. DRS will verify your disability and determine reasonable accommodations for this course.

Prof. Wu's Office Hours:

9-10 on Mon and 10-11 on Wednesday. You can meet with me outside the classroom after the lectures. You can also visit my office at OEH 219 (xlwu@pitt.edu or 624-0873) during weekdays.

Information about your TAs:

Mr. Robert Caddy (r.caddy@pitt.edu), Ms. Sze Ching Leung (SZL13@pitt.edu), Mr. Raphael Monroy (RRM59@pitt.edu), and Ms. Qian Song (QIS26@pitt.edu) will be your TAs for this term. Their office hours and locations are as follows:

Robert Caddy: Th 11-1 in Allen 500

Sze Ching Leung: M 3-4 and Th 4-5 in Allen 400

Raphael Monroy: M 10-12 in Allen 400

Qian Song: T 2-4 in Allen 400

Information about your undergraduate TA:

Chris Guiher (CMG137@pitt.edu): W 3-5 and F 3-4 in 304 OEH

Departmental Resource Room:

Thaw 312, weekdays (M-F), 9am-4pm. There will be at least one graduate student there to answer questions.