

PHYS2113-6

Syllabus

Fall 2016

Instructor: Mark M. Wilde

Office: Nicholson 447

Phone: 578-4323

Office Hours: Wed. 2pm-3pm, Thurs. 1:30pm-2:30pm in Nicholson 447
(please email before attending office hours)

Lectures: Tues. Thurs. 12:00 – 1:20pm

Room 119 Nicholson Hall

Text: *Fundamentals of Physics* by Halliday, Resnick, and Walker, 10th edition (Wiley)

Purpose: To introduce the concepts and methods of the electric force, magnetism, electromagnetic waves, circuits and optics at the level of a beginning scientist or engineer using calculus. To build problem-solving skills and to effectively use mathematics to describe nature. To understand the scientific method and the use of measurement to understand nature. This is a general education course.

General Education Information: This course is a general education course in the Natural Sciences Area, and the material in the course will address the student's achievement of this General Education Competency. Learning objectives are to demonstrate:

- knowledge of a broad survey of light, electricity, electric circuits and magnetism, including the underlying principles that govern the interactions between elementary charges, and between charges and light.
- the ability to use inductive and deductive reasoning to understand scientific phenomena as demonstrated by an ability to solve problems in light, electricity, and magnetism as well as simple circuits.
- demonstrate an ability to relate light, electricity, electric circuits and magnetism to chemistry, engineering, and/or technology.

General overview:

- Attendance at lectures is important. Part of your grade will consist of in-class participation questions. The concepts and approaches to problem solving will be developed through the readings, exercises, lectures, demonstrations and class discussion.
- Physics is not a spectator sport. You have to do physics to learn physics. To be successful, you have to do the assigned readings, homework, and participate in class.
- There will be 3 tests to assess your progress. These tests will be similar to the assigned homework and exercises and will comprise a large fraction of the overall grade in the course. Tests will be given on **Wednesday, Sept. 21, Oct. 12 and Nov. 9 from 6:00-7:00pm in Cox Auditorium.** The course grade will be derived from a weighted average of test scores, homework scores, in class exercises and quizzes, and the final exam. More details on the scoring rubric are provided below.

- It is the student's responsibility to be familiar with the University *Code of Conduct* that details the university's policy and disciplinary action regarding academic misconduct. Section 8 outlines 15 types of academic misconduct. Any student that commits or attempts to commit any type of academic misconduct must be reported to the Dean of Students for disciplinary action as outlined in Section 9 of the *Code of Conduct*.
- Students with a disability or special needs should contact the *Office of Disability Services* (112 Johnston Hall) and inform the instructor early in the semester so that appropriate accommodations can be arranged.

Lectures: There will typically be 2 classes between 12:00-1:20pm on Tuesday and Thursday. Please be on time to class. I will be prompt in starting and in dismissing class. A tentative schedule for classes is provided below. Be warned that sometimes we will have reading quizzes at the beginning of class. Makeup quizzes will not be given if you are late and miss the quiz.

Please be considerate of your classmates. The use of cell phones during class for texting or calling is not appropriate. Please silence your phones when class starts and put them away. Laptop computers and tablet computers should only be used to access class materials during class time.

I will post lecture notes, reading assignments, and sometimes conceptual exercises to the course web site. While not graded, it is important that you study the assigned material. You are expected to be able to discuss the relevant material from the reading assignment. If you appropriately prepare for class, we can spend class time more effectively by concentrating on analytical and problem solving skills rather than just going over the written material.

Homework: A homework assignment will be assigned each week using WileyPlus www.WileyPlus.com. The course ID is **531885**. If you previously purchased a WileyPlus access code for this edition of the textbook, it should work this semester with no additional fee. Homework will typically be due on **Tuesdays at 5:00pm**. WileyPlus is a very stable system, but on rare times there can be glitches. Do not procrastinate. Extensions will not be granted on homework assignments, but you can complete the assignment anytime after the due date for half credit. You are encouraged to work together with other students on homework, but the work you submit should be your own. It is most important that you understand the homework, given that it will appear on quizzes and exams. The homework will be divided into two parts: problems and multiple choice concept questions. For the problems, which require a numeric or symbolic answer, you have 12 attempts for full credit. For the concept questions, you only have one chance to answer for full credit, but you have a second chance for half credit.

In-class assignments: We will do in-class quizzes and exercises in a variety of formats. There may be "reading quizzes" to check that you are keeping up with the assigned reading material. There may also be conceptual quizzes to help prepare you for material you might see on the tests. Sometimes there will be group exercises. The format and frequency of in-class assignments are at the discretion of the instructor. Inquire if you have any questions about the format of an assignment or if collaborative work is allowed/encouraged.

Tests: There will be three 1-hour exams given on **Wednesday, Sept. 21, Oct. 12 and Nov. 9 from 6:00-7:00pm in Cox Auditorium.** Some of the problems on the tests will look very much like problems assigned for homework, but some will look somewhat different and require students to use deductive reasoning and problem solving skills. Partial credit will be given for some of the problems, and it is essential that you show all work and give explanations and intermediate steps. An answer without showing the appropriate steps through a calculation *will not be given full credit.* Units are to be carried through as a part of the solution. You will be supplied with a standard formula sheet for use during the exam. No other written material is allowed. You will need a scientific calculator.

Final exam: The University has scheduled the final exam on **Monday, December 5th from 3-5pm.** It will be of the same format and subject to the same policies as the tests, with about twice as many questions. It will be comprehensive in nature, but will emphasize the material covered after the last Wednesday night test. The final exam counts 32% of the overall grade.

Grading: The final grade in this course will be determined from tests, the final exam, quizzes, and homework averages with the following weighting:

| Category | Weight (%) |
|---------------|------------|
| In-Class Work | 6 |
| Homework | 14 |
| Tests | 16 (x3) |
| Final Exam | 32 |

Final grades will be based on the following scale. You should not expect any curving or adjustment of grades from this scale.

| Percentage | Grade | Percentage | Grade | Percentage | Grade |
|------------|-------|------------|-------|------------|-------|
| 97-100% | A+ | 93-96.9% | A | 90-92.9% | A- |
| 85-89.9% | B+ | 80-84.9% | B | 75-79.9% | B- |
| 70-74.9% | C+ | 65-69.9% | C | 60-64.9% | C- |
| 55-59.9% | D+ | 50-54.9% | D | 45-49.9% | D- |

Expected PHYS 2113 Schedule

| Week | Dates | Chapter | Notes |
|------|-------------|----------------|--|
| 1 | 8/22-8/26 | 13.1-13.2 | |
| | | 13.3-13.5 | |
| | | 13.6-13.8 | |
| 2 | 8/29-9/2 | 21.1 | HW #1 Due 8/30 |
| | | 21.2-21.3 | |
| | | 22.1-22.3,22.7 | |
| 3 | 9/5-9/9 | 22.4-22.6 | HW #2 Due 9/6, No Class 9/5 (Labor Day) |
| | | 23.1-23.3 | |
| 4 | 9/12-9/16 | 23.4-23.5 | HW #3 Due 9/13 |
| | | 23.5-23.6 | |
| | | 24.1-24.4 | |
| 5 | 9/19-9/23 | 24.5 | HW #4 Due 9/20 |
| | | Review | Test 1 (Chap. 13, 21, 22, 23) – Sept. 21 @ 6pm |
| | | 24.6-24.8 | |
| 6 | 9/26-9/30 | 25.1-25.2 | HW #5 Due 9/27 |
| | | 25.3-25.4 | |
| | | 25.5-25.6 | |
| 7 | 10/3-10/7 | 26.1-26.4 | HW #6 Due 10/4 |
| | | 26.4-26.5 | No Class 10/6-7 (Fall Break) |
| 8 | 10/10-10/14 | 27.1 | HW #7 Due 10/11 |
| | | Review | Test 2 (Chap. 24-26) – Oct. 12 @ 6pm |
| | | 27.2 | |
| 9 | 10/17-10/21 | 27.3-27.4 | HW #8 Due 10/18 |
| | | 28.1,28.4 | |
| | | 28.2-28.3 | |
| 10 | 10/24-10/28 | 28.6-28.8 | HW #9 Due 10/25 |
| | | 29.1 | |
| | | 29.2 | |
| 11 | 10/31-11/4 | 29.3-29.5 | HW #10 Due 11/1 |
| | | 30.1 | |
| | | 30.2-30.3 | |
| 12 | 11/7-11/11 | 30.4-30.6 | HW #11 Due 11/8 |
| | | Review | Test 3 (Chap. 27-30) – Nov. 9 @ 6pm |
| | | 31.1-31.2 | |
| 13 | 11/14-11/18 | 31.3-31.4 | HW #12 Due 11/15 |
| | | 31.5-31.6 | |
| | | 32.1-32.3 | |
| 14 | 11/21 | 32.4-32.8 | HW #13 Due 11/22, No Class 11/23-25 (Thanksgiving) |
| 15 | 11/28-12/2 | 33.1-33.3 | |
| | | 33.4-33.7 | |
| | | Review | HW #14 Due 12/2 |

Final Exam: Monday, Dec. 5, 3:00-5:00pm