Instructor: Tonya B. Triplett
Office: SER 234
Phone: (435) 797-8308
Email: tonya.triplett@usu.edu
Availability: I will keep regular office hours on T/R 9:00-11:30 and Wednesday, pretty much all day (minus lunch). If you need help outside those hours, please send me e-mail to set an appointment.
Prerequisites: Math 1100 or 1210 and PHYS 2110
Texts: (1) Physics, Cutnell and Johnson, currently in its 11th edition; the eighth to tenth editions are also acceptable. An electronic "eBook" copy of the 11th edition comes with your WileyPLUS code (see below).
(2) Laboratory Manual, available at the campus bookstore
Credits: 4 credit hours
Class: T/R 1:30-2:45 ESLC 130
Office hours: T/R morning about 9-11:30, all day Wednesday, after class as needed, or by appointment
Laboratory: As registered in SER 112. You will meet your TA there.
Course: http://canvas.usu.edu/
Lectures: under Canvas Media Gallery
Problems: WileyPLUS

OUTCOMES

The primary goal of the class is to teach you how physicists view the world, and help you use the tools of physics to evaluate situations and real-life problems. We will work within a learning hierarchy of (1) facts that you know, (2) concepts you understand, and (3) tasks, such as problem solving and lab, which you are able to do.
The course will specifically address these Intended Learning Outcomes:
Students will be able to:
- Explain the laws governing waves, electromagnetic fields, and their forces on charged particles
- Calculate electric and magnetic fields from symmetric charge and current distributions
- Solve circuit problems with basic elements
- Describe biomedical applications of these laws

CONCEPTS

Students are expected to commit certain fundamental concepts to memory, and to apply them in solving problems on homework and examinations. Concepts will be covered thoroughly in class. Note cards are not permitted during examinations. I will prepare an equations page for each section of the course that you will be provided during the exam. It will contain some, but not all, equations needed. You will be required to memorize many equations for problem solving.
COMPONENTS

You must be enrolled in all three components of the course: lecture, recitation, and laboratory:

I. Lecture
Lectures will be held T/R in ESCL 130. Lectures will cover concepts and examples to prepare you for homework assignments and exams. Reading the pertinent sections of the textbook beforehand will help you prepare for each lecture.

II. Recitation
Recitations sections are held on Friday. A recitation section is a small group of students enrolled in the course, led by a teaching assistant. These sections give you an opportunity to ask questions and work on problems in order to deepen your understanding of the material in preparation for examinations. Recitations will begin the first week.

III. Laboratory
Eight two-hour laboratories are scheduled throughout the semester to give you hands-on experience with the material. A missed lab can be made up only during the week that it is scheduled, during another scheduled lab period that has an open slot. To make up a lab, you must obtain a note from the Physics Department office (SER 250). This note will get you into another lab section that week only. No labs are taught on Fridays. Laboratories will begin week 2.

ASSESSMENTS

Your learning will be assessed through homework assignments, lab quizzes, recitation quizzes, examinations, and pre/post-tests.

I. Homework (20% of grade)
We will use the WileyPLUS system for homework and for your textbook. Access is directly through Canvas and instructions for your first log-on are there for you. In the program, each question part is worth 1 point toward your total homework score. Your homework average is the number of correct answers divided by the total number of questions. No credit will be given for problem sets completed after the deadline.

II. Lab and Lab Quizzes (20% of grade)
After completing each laboratory, you will be given a quiz consisting of three multiple-choice questions. The quizzes encourage you to participate actively in the laboratory and provide a record of this participation. Attendance and completion of the lab tasks will be graded 12 points, and then each quiz question is worth 1 point. Each lab is therefore worth 15 points. There will be 8 labs throughout the semester and you will NOT drop any scores.

III. Recitation Quizzes (8% of grade)
Recitation is designed to help you with homework problems and/or conceptual problems encountered in the week’s material. In an effort to allow you maximum flexibility in learning, recitations are not required to be attended every week. Overall, you will be graded for your work on half of the recitations although you may choose to attend more. A pre-assessment will be available through Canvas to let you see where you stand. During the last 15 minutes of each recitation, or other time...
determined by the group and the TA, a sample test problem will be assigned. During this exercise, you are encouraged to ask your TA for any help at all. The goal is for you to complete the problem correctly. Each time you ask a question, the TA will give you just the information you need to continue further with the problem, until you can complete it. You will drop half of your recitation quiz scores.

IV. Exams (50% of grade)

There will be four exams, evenly spaced and weighted throughout the semester as shown in the schedule. You will take all exams in the testing center and may elect to take it anytime within the posted window. The final examination will not be comprehensive. Backpacks, books, note cards, equation sheets, flash cards, copies of PowerPoint lectures, and other materials are not permitted. Scratch paper will be provided by the testing center, and must be left at the testing center after you complete the test. Internet use during tests is restricted to Canvas. No other Internet access is permitted, including access through your phone or calculator. Those desiring to use graphing calculators must remove all equations from them prior to the examination, and must present them to teaching assistants upon request to verify compliance. Like the homework, the exams will include both conceptual and quantitative problems. Some questions will test your knowledge of concepts identified in class. Others will be variations on homework problems and in-class examples, while yet others will test your ability to extend concepts to new problems. All work on exams is expected to be independent of other students and to be free of unauthorized aid. The minimum consequence for academic dishonesty on an exam is a zero on that exam.

V. Assessment of Understanding (2% of grade)

In lieu of a final exam, a set of pre-test and post-test will be a required part of the course. Grading for this will be as follows:
1. For taking the pre-test and completing all problems (correctly or incorrectly, but not blank), a score of 10/10 will be given. (Grading of this is complicated and I will explain it in class.)
2. For taking the post-test and completing all problems, AND showing improvement from the pre-test score, a score of 10/10 will be given.

NEED HELP?

If you find yourself stuck on a particular topic or problem, you may try one or more of the following.

- Review the relevant chapter and/or class notes, and study any relevant example problems.
- Try to solve a similar problem. The solutions to odd numbered problems are given in the back of the textbook.
- Talk with other students in the class. Ask them to explain things to you rather than solving the problem for you.
- Ask for help in recitation.
- Seek help from the class instructor or one of the teaching assistants.
- Take advantage of the Physics Department help center in **SER 219**. This center is staffed during much of the business day.
GRADE SCALE

The following grade scale will be used:

A ≥ 93.0%,
A− ≥ 90.0%,
B+ ≥ 87.0%,
B ≥ 83.0%,
B− ≥ 80.0%,
C+ ≥ 77.0%,
C ≥ 73.0%,
C− ≥ 70.0%,
D+ ≥ 67.0%,
D ≥ 60.0%,
F < 60

ENVIRONMENT

I am committed to fostering a nurturing learning environment based upon open communication, mutual respect, and non-discrimination on the basis of race, sex, age, disability, veteran status, religion, sexual orientation, color, or national origin.

Materials for Persons with Disabilities: USU welcomes students with disabilities. If you have, or suspect you may have, a physical, mental health, or learning disability that may require accommodations in this course, please contact the Disability Resource Center (DRC) as early in the semester as possible (University Inn # 101, 435-797-2444, drc@usu.edu). All disability related accommodations must be approved by the DRC. Once approved, the DRC will coordinate with faculty to provide accommodations.

Honor Code: The honor code will be strictly enforced in this course. Any suspected violations of the honor code will be promptly reported to the honor system. For more information please visit: http://www.usu.edu/policies/PDF/Acad-Integrity.pdf

SCHEDULE

ALL DATES ARE TENTATIVE AND WILL BE ADJUSTED TO MEET THE GOALS OF THE COURSE

<table>
<thead>
<tr>
<th>Week of</th>
<th>Lab Your Section</th>
<th>Tuesday (lecture)</th>
<th>Thursday (lecture)</th>
<th>Friday (Recitation)</th>
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<tbody>
<tr>
<td>January</td>
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<tr>
<td>6</td>
<td>No Lab</td>
<td>1. Chapter 16A (16.1,2,3,5 Waves)</td>
<td>2. Chapter 16B (16.6,7,8,9,11 Sound)</td>
<td>Pre-test due Recitation 16 HW 16 due 11:59 PM</td>
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<tr>
<td>13</td>
<td>Lab 1 Standing Waves</td>
<td>3. Chapter 17A (17.1,2,3,4 Superposition)</td>
<td>4. Chapter 17B (17.5,6,7 Standing Waves)</td>
<td>Recitation 17 HW 17 due 11:59 PM</td>
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<tr>
<td>20</td>
<td>No Lab (Holiday)</td>
<td>5. Chapter 18A (18.1,2,3,4,5 Electric Forces)</td>
<td>6. Chapter 18B (18.6,7,8 Electric Fields) <strong>TEST 1 (Ch 16-18) (Jan 23-30)</strong></td>
<td>Recitation 18 HW 18 due 11:59 PM</td>
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<tr>
<td>Date</td>
<td>Lab</td>
<td>Chapters</td>
<td>Recitation</td>
<td>HW Due</td>
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<td>February 3</td>
<td>Lab 2</td>
<td>Electric Fields and Potential</td>
<td>9. Chapter 20A (20.1,2,3,4,5 Electric Circuits)</td>
<td>Recitation 20 HW 20 due 11:59 PM</td>
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<tr>
<td>10</td>
<td>Lab 3</td>
<td>Simple Resistive Circuits</td>
<td>11. Chapter 20C (20.9,10,12,13 Kirchoff)</td>
<td>Recitation 20B HW 20B due 11:59 PM</td>
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<tr>
<td>17</td>
<td>No Lab</td>
<td>Holiday</td>
<td>13. Chapter 21B (21.4,5,6 Magnetic Fields)</td>
<td>Recitation 21 HW 21 due 11:59 PM</td>
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<tr>
<td>24</td>
<td>No Lab</td>
<td></td>
<td>15. Chapter 22B (22.7,8,9 EM Induction)</td>
<td>Recitation 22 HW 22 due 11:59 PM</td>
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<td>March 2</td>
<td>Spring Break</td>
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<tr>
<td>9</td>
<td>Lab 4</td>
<td>RC Circuits</td>
<td>17. Chapter 23B (23.3,4 LCR Circuits)</td>
<td>Recitation 23 HW 23 due 11:59 PM</td>
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<tr>
<td>16</td>
<td>Lab 5</td>
<td>LCR Circuits</td>
<td>19. Chapter 24B (24.4,5,6 EM Waves cont.)</td>
<td>Recitation 24 HW 24 due 11:59 PM</td>
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<td>30</td>
<td>No Lab</td>
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<td>23. Chapter 26B (26.6,7,8,9 Lenses)</td>
<td>Recitation 26 HW 26 due 11:59 PM</td>
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<td>April 6</td>
<td>Lab 7</td>
<td>Diffraction</td>
<td>25. Chapter 28 (28.1,2,3,4,6 Special Relativity)</td>
<td>Recitation 28 HW 27-28 due 11:59 PM</td>
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<td>13</td>
<td>Lab 8</td>
<td>Optical Spectroscopy</td>
<td>27. Chapter 30 (30.1,2,3 Nature of Atoms)</td>
<td>Recitation 30 HW 29-30 due 11:59 PM</td>
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<td>20</td>
<td>No Lab/End of Course</td>
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<td>29. Chapter 32 (32.2,5,6,7 Nuclear Energy)</td>
<td>TEST 4 (Ch 27-32) (Apr 21-27) HW 31-32 due 11:59 PM</td>
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