

Syllabus

General Physics – Life Sciences I

PHYS 2110

Fall 2016

Instructor: Dr. James T. Wheeler

Office: SER 228

Email: jim.wheeler@usu.edu

Email is the quickest way to contact me, and is an excellent way to get questions answered. We can always set up an office appointment, but most questions can be answered more quickly by email.

Office Hours: Try email first, but I'm always available after class and we can make an appointment for longer questions. Also, for impromptu meetings, I'll be having lunch after class in either the Quads Café or the Agriculture building café and you're welcome to track me down there.

Prerequisites: Math 1100 or 1210

Texts: (1) *Physics*, Cutnell and Johnson, tenth edition. The eighth or ninth edition are also acceptable. An electronic copy of the tenth edition is available through WebAssign at <http://www.webassign.net/>

(2) *Laboratory Manual*, available at the campus bookstore

(3) *WebAssign online homework*, see below for details

Credits: 4 credit hours

Lecture: MWF, Biology/Natural Resources (BNR) 102, 12:30 – 1:20 PM

Course Website: <http://canvas.usu.edu/>

Final Exam: Wednesday, December 14, 2016, 11:30 a.m. – 1:20 p.m.

Components

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

1. **Lecture:** Lectures cover concepts and example problems. Understanding these is your central goal. It is best achieved by reading the relevant sections of the textbook in advance of the lecture, taking notes through the lecture, then following with the homework assignments to expand the depth of your comprehension.

2. **Recitation:** A recitation section is a small group of students led by a teaching assistant. These sections are an excellent opportunity to work on problems in a helpful environment, in order to deepen your understanding of the material. Recitations will begin week 2.

3. **Laboratory:** Eight 2-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 begin the first week.

Outcomes

After successfully completing this class, students will be able to:

- Describe and predict the motions of physical bodies, using the following:
 1. Positions, velocities, accelerations, angular velocity, angular acceleration
 2. Forces and torques, and the use of Newton's laws of motion
 3. Energy, momentum, angular momentum and their conservation laws
- Understand the relationships of fluid pressure, density and velocity
- Describe thermodynamic properties, including internal energy, temperature, heat flow and entropy

Students are expected to remember certain fundamental concepts, and to apply them in solving problems on homework and examinations. The important concepts will be covered thoroughly in class. Note cards are not permitted during examinations.

Assessments

Your learning will be assessed through homework assignments, lab quizzes, and examinations.

I. Homework (25% of grade)

On WebAssign, each question is worth 1 point toward your total homework score. Your total homework score is the number of correct answers divided by the total number of questions.

II. Lab Quizzes (15% of grade)

Success on the quizzes requires you to participate actively in the laboratory and provide a record of this participation. After completing each laboratory, you will be given a quiz consisting of three multiple-choice questions. Each quiz is worth 5 points: 2 points for taking the quiz and 1 point for each correct answer. Your quiz score will be the number of quiz points divided by 40 (8 quizzes x 5 points / quiz).

III. Exams (60% of grade)

There will be four 50-minute exams: three in-class exams during the course of the semester and one at the regularly scheduled final-exam time. Each exam counts for 15% of the grade, and will cover approximately one fourth of the material in the course; the exams are not comprehensive.

You may use only a number 2 pencil and a calculator without access to the Internet during exams. 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. Scantron forms will be provided. All other materials such as backpacks, books, note cards, equation sheets, and returned homework must remain out of sight on the floor under your seat.

Each exam will have 20 to 25 multiple-choice questions, including 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 still 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 consequence for academic dishonesty on an exam is a zero on that exam.

Requests to reschedule an exam must be made prior to the exam, and must be accompanied by proof of personal illness, death in the immediate family, or a conflicting university-related event.

Grade Scale

The following grade scale will be used:

A \geq 93%	B+ \geq 87%	C+ \geq 77%	D+ \geq 67%
A- \geq 90%	B \geq 83%	C \geq 73%	D \geq 63%
	B- \geq 80%	C- \geq 70%	F < 60%

All students' raw percentages will be given a small, additional upward adjustment (by an amount to be determined) to account for possible errors in online grading.

WebAssign

Homework is presented and submitted online at www.webassign.net, with assignments due on Tuesday nights at 11:59 PM. For one semester access, the cost is \$45.95 for the homework alone and \$90.70 for both the homework and the electronic textbook (eBook), payable online. For lifetime access, the cost is \$71.00 for the homework alone and \$121.00 for both the homework and the eBook. Since WebAssign will be used for online homework for PHYS 2110 in Fall 2016 and for PHYS 2120 in Spring 2017, students planning to take both courses this year will save money by purchasing lifetime access. You may access the homework and the eBook without paying for them until September 12, when the grace period ends and payment comes due.

Instructions for registering for homework:

- (1) Go to the site www.webassign.net/. Click on the **ENTER CLASS KEY** button.
- (2) Enter the class key: **USU** in the first box, **8047** in the second box, and **4020** in the third box. Click the **SUBMIT** button. If you have correctly entered the class key, the class information

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Utah State University, UT

should appear. If so, click the **YES, THIS IS MY CLASS** button.

- (3) On the next webpage leave "I need to create a WebAssign account" selected and click on the **Continue** button.
- (4) Fill in the 7 boxes with the required information. **Important:** In the box that asks for your **Student ID number**, use your **A-Number, starting with a capital A**. Doing so will ensure that you receive course credit for your WebAssign homework.
- (5) Select **CREATE MY ACCOUNT**.
- (6) On the next webpage select **LOG IN NOW**.
- (7) You should now be at your **Home** page. At this point you can purchase access to the homework and/or the electronic textbook, as described above. You have a brief grace period for using the system without payment, but after that you will need to purchase access to the homework.

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 day.

Environment

We are 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. Academic integrity is expected of all students, and is strictly enforced.

Please advise the instructor if you are a person with a disability and anticipate needing any type of accommodation in order to participate in this class. Accommodations for ADA-documented physical, sensory, emotional, or medical impairments must be coordinated through the Disability Resource Center (DRC) in Room 101 of the University Inn, (435) 797-2444 voice, (435) 797-0740 TTY, (435) 797-2444 VP, or toll free at 1-800-259-2966. Alternate format materials (Braille, large print or digital) are available with advance notice. Veterans may be eligible for accommodations.