



## The POINT of this class

Physics is a study of the natural world, and the laws that we can deduce from studying it. As with all sciences, physics concerns itself with the search for natural causes of natural phenomena. Physics is the foundational science---all systems, whether chemical, biological, geological or astronomical (or any other kind), are described at the deepest level by considerations of energy, momentum, and other physical concepts. This is the best reason to study physics: it's the most basic explanation of everything that happens in the natural world.

However, there's a much more practical reason to study physics. Over several millennia, the scientists who have studied physical problems have developed the most successful problem-solving methodology known to man. While on the one hand, you are here to find out how the Universe works, you are also here to find out how to find out. You are here to learn to solve problems: to learn how to ask questions of the natural world, and how to find out what the answers are. Physics is all about METHOD. It's far less important that you know the right answer than it is that you know how to find it, both in a specific homework problem and in general.

Interestingly, the Universe 'speaks' math. That is, the questions that you ask (and the answers that you get) typically can most easily be expressed in mathematical form. But don't mistake the language for the meaning. Just as it's usually possible to express your thoughts about politics in either English or Spanish, it's possible to express your thoughts about the Universe in English as well as in Math. You'll know when you really 'get it', when you find yourself able to go beyond the mathematical argument, and describe in English what's happening in the problems you are solving. We'll practice both languages in this class.

## Contact Information

You may need to get in touch with me during the semester. My office is next door, down the hall from your lab classroom, in SL209. Office phone number: 801.626.7030. Email: [spalen@weber.edu](mailto:spalen@weber.edu). Announcements will be made on the course website: <http://physics.weber.edu/palen/Phsx2210>. Office hours are Mon, 10-11; Tue/Thur, 10-11, Wed 1-2:30, or by appointment. You can check my official work calendar on Google calendar, to see if I have a meeting when you need to see me. Otherwise, my weekly calendar is posted on my door.

## The Text

Of course there's a textbook: *Physics for Scientists and Engineers*, by Randall D. Knight, available at the bookstore. You'll also need the Mastering Physics Student Access Kit (available for \$45 from [masteringphysics.com](http://masteringphysics.com) if you bought your book used). The course ID is Palen07. When you first register online with Mastering Physics, you'll be asked for a name and an ID number. Use your name and your wildcat ID.

## Grading

There are five components of your grade in this class:

1) **In Class Exercises (5%):** These are brief 'did you get it' exercises, such as ranking tasks, word-of-the-day, etc. Each day you'll get one of these at the beginning of class, and they are graded out of 3 points. You get 1, just for being there and handing something in. You get 2 for being approximately, sort of close to right, and 3 points for being exactly right on. The point is to encourage you to read ahead in the text, and also to come to class (I can't teach you if you aren't here!).

2) **Mastering Physics Exercises (35%):** These exercises are on-line. You will have an ungraded 'practice' assignment the first week that will help you learn the system. Here's some explanation:

a) Most are ordinary, odd, end of chapter problems, with randomized numbers. This means that the very best way to get every single point is to work the problem with the book numbers FIRST, check your answer with the back of the book, and then work them again with randomized numbers. Occasionally, the even problems will be better. I will not give answers to these questions---they are good practice for the exams: practice at checking your own answers

b) All are worth 10 points.

c) We will average 15 questions per week, one of which is extra-hard, and will gain you extra credit. This is the only extra credit available, and is meant to make up for those bad days that happen to everyone once in a while.

d) Homework is due at 11:59 pm on Wednesday night. Your score decreases immediately to zero after this time.

e) Each time you 'guess' an answer, you will lose 5% of the possible points, and you get six chances to answer each question.

f) Sometimes, there are hints. If you don't open them, you'll get extra-sneaky extra-credit.

3) **Project (5%):** You will work on a project during the course of the semester, finding the physics in your favorite activity. More on this on the first Friday.

4) **Exams (7% each, 35% total):** Exams will be given in class, and each is one hour, except the final, which is two hours long. The final is on Tuesday of finals week at 9:30 am in LL121. There are five exams during the semester, each covering approximately 1/5 of the material. Please note that exams and homework are equally weighted in this class. Exams are important for you, because you can figure out where you need to work harder, or seek help. AND, they give you an opportunity to practice real-life skills, like thinking on your feet, dealing with pressure, working under a deadline, and prioritizing how you spend your time. Check the exam schedule NOW to be sure you will be here for these exams. If you are going to miss an exam, please discuss it with me as far in advance as possible. I will presume that you knew about your wedding at least two weeks ahead of time, for example. If you have an actual emergency on exam day, call my office at 626-7030. Please note that 'my alarm clock did not go off' is not an actual emergency. In the case of an actual emergency, or when alternate arrangements need to be made, I reserve the right to give an oral exam instead of a written one.

5) **Lab (17% lab reports, 3% lab final):** More on this in your lab section, which you absolutely should have already signed up for!

## Cheating Policy

You should know that I find cheating disgusting and reprehensible, and if I find you cheating, I will consider that you are disrespecting me, the rest of the class, and yourself. If you cheat, you are essentially saying that you would rather waste everyone's time than put in an honest effort.

That said, I encourage you to work together on the homework. Often, different people read the question differently, or view the diagram differently. It's invaluable to discuss the problems, the answers, and what they mean. But when it comes down to it, YOU have to learn something! You have to do some of the processing on your own. Work together on the problems, but go off by yourself and look at them again to make sure you understand. This will help you to figure out how much you lean on your peers.

The first time I find cheating on homework, I will divide the score among the cheaters. The second time, all will receive zeros on the assignment, and the third time, all will fail the course. If I find you cheating on an exam, you will fail the course.

I reserve the right to deal with other instances of academic dishonesty as I see fit.

## In Summary

Homework is really, really important. No individual exam is worth enough to have a dramatic effect on your grade. If you do the extra credit, you may not need to take the final. Don't cheat: it's bad form.

Any student requiring accommodations or services due to a disability must contact Services for Students with Disabilities in room 181 of the Student Services Center. SSD can also arrange to provide course materials in alternative formats if necessary.

## Approximate Course Calendar:

Monday's Date	Chapters covered this week	Monday	Tuesday	Wednesday	Thursday	Friday
8/27	1-2	1.1-1.4	1.5-2.1	2.2-2.7	2.8	Project
9/3	3-4	No school!	3.1-3.4	3.5-4.2	4.3-4.7	Project
9/10	5-6	5.1-5.4	5.5-6.1	6.2	Review	Exam 1: Ch 1-5
9/17	6-7	6.3-6.4	7.1-7.3	7.4-7.5	7.6	Project
9/24	8-9	8.1-8.4	8.4-8.5	9.1-9.4	9.5-9.7	Project
10/1	10	10.1-10.3	10.4-10.6	10.7	Review	Exam 2: Ch 6-10
10/8	11	11.1-11.4	11.5-11.6	11.7-11.8	11.9	Project
10/15	12-13	12.1-12.3	12.4-12.5	13.1-13.2	13.3	No School!
10/22	13	13.4-13.6	13.7-13.8	13.9-13.10	Review	Exam 3: Ch 10-13
10/29	14	14.1-14.2	14.3-14.5	14.6	14.7-14.8	Project
11/5	15-16	15.1-15.2	15.3-15.5	15.6-16.2	16.3-16.5	Project
11/12	16-17	16.6-17.1	17.2-17.3	17.4-17.5	Review	Exam 4: Ch 14-17
11/19	17-18	17.6-17.7	18.1-18.2	18.3-18.4	No School!	No School!
11/26	18-20	18.5-18.6	19.1-19.4	19.5-19.6	20.1-20.3	Project
12/3	20-21	20.4-20.7	21.1-21.3	21.4-21.8	Review	Review, Projects Due
12/10	All		Final, 9:30			