Math prerequisite: first-semester calculus (221 or equivalent), algebra and trigonometry.

Materials:
- Text: *Physics for Scientists and Engineers, 2nd Edition* by Randall Knight
- Website: masteringphysics.com - homework and interactive applets
- Lab Manual: *Physics 201 and 207 Lab Manual* by Rollefson, Richards, Winokur
- Lab Notebook: spiral or hard-bound graph-paper notebook
- Scientific Calculator with trig, exponential and logarithmic functions

Lectures: 12:05 TR(F) in 2103 Chamberlin Hall

Course material is covered in the Tuesday/Thursday lectures. Honors students are required to attend the Friday lectures, while the rest are encouraged to participate, where we'll hear about current research and do some fun projects.

*Read the chapter before the lecture!* I know that sounds ridiculous, but it has an amazing effect on your absorption of the concepts, which come fast and furious in this class. I don't think about physics exactly the same way Knight does, and it benefits you to see his take on things before you see my take on them. Hopefully you'll come to lecture with some questions in mind!

Labs: 4310 Chamberlin Hall

The purpose of the labs is to give you some exposure to physics in action in a controlled setting, and to give you some practice writing down what you see in an organized manner. The lab topic will sometimes precede coverage in lecture. That's fine, because in the real world, we don't get a lecture before we carry out an experiment. It's good to see stuff happen without knowing "why," that's a huge part of experimental physics. There is no "success" or "failure" in a lab – it's all about recording your observations, comparing with the physics you know, and being an objective scientist. Physics is a science, so it's in the lab, not lecture, where it actually happens.

Read the introductory text in the lab manual (pages 5-15) before your first lab. Leave your lab notebook with your TA at the end of each lab for grading. There is no lab-related work outside of the lab period. The lab manual is also online at badger.physics.wisc.edu.

There are two make-up lab weeks scheduled for folks with a valid excuse (like, "I played basketball at Penn State that week"). If you have a conflict, you can go to a different lab section if both TAs agree. Get your lab notebook to your own TA afterward.

Labs will be graded generously, but you cannot miss them. Each missed lab will lower your final grade by a step. Labs are 20% of your grade and they matter. Show up, and have fun!

Discussion Sections

Discussions are the place to clarify ideas, ask questions, and work on problems. Questions about the homework are allowed before it is due, but your TA won't do your homework for you. If you have an issue with your discussion section or lab, don't hesitate to talk to me about it. Discussions and labs are for your benefit.
**Homework**

Homework problems are assigned each week and are due the following Monday at 11pm. Late homework is not accepted. Complete the homework online at masteringphysics.com. If you bought a new book, it includes an access code; if not, you’ll have to purchase access (sorry about that). Register using your campus ID, your access code and the course ID: PHYSICS207S2011.

You are strongly encouraged to work on homework with other students, but be sure you understand the answers that you provide. Solutions will be placed on reserve in the Physics Library (4220 Chamberlin) on Tuesday mornings.

**Exams**

There are four equally-weighted exams, two of which are given on Wednesday evenings:

- **Exam 1 Chapters 1-8** Wednesday, February 23, 7:15-8:45pm
- **Exam 2 Chapters 9-15** Wednesday, April 13, 7:15-8:45pm

If you have a legit conflict with one of these exams, we will schedule an earlier time slot for you to take it.

The remaining two are given during the final exam period, **Monday, May 9, 10:05-12:05:**

- **Exam 3 Chapters 16-21**
- **Exam 4 Cumulative**

You'll be given both exams at the start so you can divide your time between them as you see fit.

Exams are closed-book, but you may bring a single 8"x5" card to the Wednesday exams, and two cards to the final exam (I'll hand out blank cards). Bring a calculator and pencil as well, of course!

**Grading**

Your grade for the course is calculated as follows:

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<thead>
<tr>
<th>Component</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>Exam 1</td>
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<td>Exam 2</td>
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<td>Exam 4</td>
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<tr>
<td>Labs</td>
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<tr>
<td>Homework</td>
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<tr>
<td>Discussion</td>
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Since exam, lab, homework and discussion scores vary a lot, I don't use raw scores to calculate your total score. Rather, I normalize the scores for each component using the "z-score" method, which converts a raw score distribution to one with a mean of 0 and a standard deviation of 1. That way we hopefully get a fair contribution from each component. Some folks have trouble on exams, but do really well on labs, homework and discussion. They'll get a fair 40% contribution from their strength. I know folks want to see how they did on exams with a letter grade, so I'll provide a guideline after exams – but I use scores, not letters, to compute your course grade (with input from your TA). And by the way – the more you participate in lecture, the smarter I'll think you are, and the more generous I'll be in grading the class as a whole. Seriously.