

## SOME TIPS ON STUDYING PHYSICS:

- 1) **Read the text and do the workbook exercises before coming to class.** When you come to class, I assume that you've already read the assigned sections in the text and done the exercises in the student workbook. Preparing beforehand will help you get the full benefit of the in-class discussion and activities.
- 2) **Keep up with your homework on a regular basis.** Physics is more skill-based than knowledge-based: compared to a subject like history, there aren't as many individual facts you need to know, but you need to be able apply a small number of fundamental concepts to a wide variety of situations. This means that you can't just read the material, you have to *practice* it in order to understand it. You also need to give it time to sink in. Putting off homework until a day or two before the exam is the most frequent cause of poor test scores. Start on the homework as soon as you can. You should plan on spending at least an hour or two on the homework every day.
- 3) **Don't get stuck on a particular problem.** If you get stuck on a problem, avoid the temptation to keep at it until you've solved it, even if it takes hours of your time. This isn't an effective use of your time and it's the best way to drive yourself crazy. If you're stuck on a problem for more than five or ten minutes, go on to the next one. If you can't seem to solve any of the problems, go do something else for a while, or sleep on it and try again the next day. Often, when you come back to the problem, you'll find you have some new ideas. If you're still stuck, get help from another student, a tutor, or me.
- 4) **Do the problems more than once.** After you have solved the problems, do them over again a day or so later. Work through each of the required exercises and problems at least twice – more if needed until you feel completely comfortable with the problems. When you really understand a problem, you'll be able not just to find the correct answer, but also to explain the solution to another student in your class. You should be able to explain not just *what* you do at each step, but *why* you do it that way.
- 5) **Form a study group.** The most effective way to learn physics is to discuss problems with another student, or in a group of three or four students. If you're stuck on a problem, someone else in the group may come up with the "missing piece" that lets you solve the problem. If you already know how to do a problem, explaining it to other students helps to solidify your understanding. Talking through the problems with other students will give you to a much better understanding of physics concepts.
  - a. Most people find the study group works better if everyone first tries to do the homework on their own before meeting together. This allows the group to focus on the areas where people are having difficulty.
  - b. I will also set up a discussion group on Blackboard where you can ask questions of other students.
- 6) **See a tutor.** FREE tutoring in physics is available by appointment. Call extension 6682 at least 24 hours in advance to make an appointment. Tutors have been through this class before, so they understand your situation. When you make the appointment, let the tutor know which concepts or problems are giving you difficulty. The more information they have, the better they can prepare to help you.
- 7) **See me.** I'll usually spend the first fifteen minutes or so of lecture going over problems. If you have questions about the homework, don't worry that they might sound foolish or be shy about asking in them class – it's almost guaranteed that other students have the same questions. If your question doesn't get covered during class, see me during office hours. My office hours are listed on the syllabus. That's the best time to ask me questions about problems or concepts you're not clear on. Another good time is late in the lab session, after your group has finished taking data.