# Engineering Physics 1 (Phys. 213) Study Guide, Spring 2006

The goal of this course is to help you learn the foundational knowledge of physics and how this knowledge can be applied in solving physics problems.

In EP1 we will focus on Mechanics, Waves and Oscillations, and Thermodynamics.

My lectures will help you develop a conceptual understanding of physics while the studios will help you integrate conceptual understanding with problem solving skills and concepts of measurement.

- **Text:** Fundamentals of Physics, by Halliday, Resnick, and Walker, 7th edition, extended.
- **Instructor**: Dr. Amit Chakrabarti, Professor of Physics

Office: Cardwell Hall # 213, Tel: 532-1625, e-mail: amitc@phys.ksu.edu
Office Hours: Tue and Fri 2:30 PM --- 3:30 PM, and other times by appt.

**Point Allocations:**

| | |
|---|---|
| Quiz Scores | 500 Points |
| Studio | 300 Points |
| Final Exam | 200 Points |

**Grade Assignment:**

| | |
|---|---|
| 900-1000 | A |
| 800-899 | B |
| 700-799 | C |
| 600-699 | D |
| 0 -599 | F |

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**Lectures:**
Lectures in this class are important; attend all lectures, and get notes from a friend if you have to miss one. I will write *highlights* for each lecture and post them on K-State Online. These write-ups are going to be of little use to you if you do not show up at the lectures.

**Studios:**
You must be enrolled in a studio. You must bring with you a studio manual (available at the Arts and Sciences Copy Center) and a 5 x 5 Quad Ruled (**not spiral bound**) lab notebook (available at the Student Union or Verney's) to the first studio.

In the studio part of the course you will be graded on homework assignments, in-studio quizzes, and studio labs. Your grade for the studio is determined by your studio instructor.

**Point Allocations for the Studio Section:**

| | |
|---|---|
| Homework | 60 Points |
| Studio Lab | 120 Points |
| In-Studio Quizzes | 120 Points |

**Home Work Problems**

- Home work assignments are listed on the schedule page.
- Homework assignments will be collected in studio.
- It is important that you attempt all of the assigned homework problems and questions before you come to the studio.

**Learning the Material and Working out Home Work Problems:**

- After every lecture, you should first go over my summary/highlights write-ups that I will post on K-State Online. Then you should review the lecture notes from class and consult the text book. Next you should go over the *checkpoints* and *sample problems* listed in the extended study guide. You should do all these before starting to work on homework problems.

- In trying to solve problems you should develop a strategy of first visualizing the physical situation (e.g. draw a diagram). You should then perform the algebraic calculations without substituting numbers for symbols for as long as possible. This allows for better trouble shooting, reveals dependencies and possible cancellation effects, and enhances your physical intuition. In order to obtain numerical solutions, you can substitute numbers at the end.

**Help with homework and other questions you might have:**

- Show up in mine and your studio instructor's office hours. You are already paying for these.
- The physics department staffs a work-room in Cardwell Hall, for students who want extra help with this course. This is a good place to work on homework problems. I will announce details later.
- Answers to homework problems and questions will be posted on K-State Online.
- On most Fridays that we do not have a quiz, I will teach a problem solving session sometime in the afternoon. This will give you another chance to ask me any question you might have about the material. I will announce details later.

**Examinations:**

- There will be five quizzes during the term, each worth 100 points.
- All quizzes will be given in CW 101 on Fridays (see schedule) from 4:30 to 5:45 PM.
- **There will be no make up quizzes, but of these five quizzes, your lowest quiz score will be dropped.**
- Your 4-highest quiz scores will then be added up and multiplied by a factor of 1.25 to reflect a total of 500 points for the quizzes.
- A comprehensive final exam worth 200 points will be given in CW 101 on Friday, May 12 from 7:30 to 9:20 AM.
- **The final exam is mandatory and will be given only at the scheduled time.**
- All quizzes and the final exam will consist of multiple-choice questions and problems. These will be related to lecture materials including in-class demonstrations, worked-out examples and checkpoints in the textbook, and to homework and lab assignments for studios.
- Scientific calculators will be allowed on quizzes and the final exam.
- An equation sheet will be provided at the time of each quiz and the final exam.

University policy requires that the following be included on this study guide:

I. STATEMENTS FOR ACADEMIC ACCOMMODATIONS FOR DISABLED STUDENTS
If you have any condition, such as a physical or learning disability, which will make it difficult for you to carry out the work as I have outlined it or which will require academic accommodations, please notify me and contact the Disabled Students Office (Holton 202), in the first two weeks of the course.
II. STATEMENT REGARDING ACADEMIC HONESTY
Plagiarism and cheating are serious offenses and may be punished by failure on the exam, paper or project; failure in the course; and/or expulsion from the university. For more information refer to the ``Academic Dishonesty'' policy in K-State Undergraduate Catalog and the Honor System Policy on the Provost's home page at http://www.ksu.edu/honor/.