

INSTRUCTIONS FOR USE

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- as photocopy masters.
- as a source of material that can be modified to suit your own needs.

To locate and print a specific handout:

- Use the bookmarks at left
- Click on the item you need.
- Use “Print” from the “File” menu to make a printout of the quiz.

To search for a specific word or phrase within this file:

- Use “Find” from the “Tools” menu .

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- Use “Select Text” from the “Tools” menu to copy the text you want to edit.
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Introductory Questionnaire

1. What do you hope to learn from this course?
2. What do you hope to do with this new knowledge?
3. What do you expect the lectures to do for you?
4. What do you expect the book to do for you?
5. How many hours you think it will take to learn all you need to know from this course? Include everything: lectures, homework, etc. _____ hrs/week

Questionnaire

1. What do you love about this class?

2. What do you hate about this class?

3. If you were teaching this class, what would you do?

4. If you could change one thing about this class, what would it be?

INTRODUCTORY QUESTIONNAIRE RESULTS

1. *What do you hope to learn from this course?*

I am excited to see that many of you hope to learn exactly what I am planning to teach! For those of you who were hoping for something else, however, I should clarify my goals. I plan to teach the basic principles of physics (to be specific, kinematics, conservation laws, mechanics, fluids, waves, and optics) and in the process:

1. teach you what physics is about;
2. provide an opportunity for you to sharpen your analytical thinking skills;
3. stimulate your curiosity and inquisitiveness about the world, provoke your questions, make you challenge conventional thoughts.

While there will be many topics in physics I will not have time to cover, I hope to give you the skills that will enable you to understand these topics as you encounter them in your future studies.

2. *What do you hope to do with this new knowledge?*

Many interesting answers were given. I was gratified to see that many people replied that they hoped to use the knowledge and skills gained in this course in their own fields of interest. This is precisely what I hope to achieve in this course. I want the material we cover to be useful to you beyond the exam. I want you to become good critical and analytical thinkers, able to tackle not just familiar problems but also unknown new problems or questions. Not only to plug numbers into equations but able to develop new models and theories, to make qualified assumptions, and then use those models and assumptions to break new ground in science and technology.

3. *What do you expect the lectures to do for you?*

There were many very thoughtful responses to this question, but I did encounter a number of misunderstandings about the lectures that I should address to avoid falling short of your expectations. The most serious misconception I encountered is that the lectures will present and explain the fundamental concepts, while the book will clarify the ideas presented in the lecture. This is *not* what is going to happen. You will be reading the material *before* coming to class. The book will introduce the basic terminology and definitions, hopefully raise some questions, perhaps even confuse you a little (“to wonder is to begin to understand”). The lectures are intended to challenge your thinking and thereby help you assess your understanding of the concepts you read about, to further and deepen your understanding of these concepts, to stimulate and inspire you, and to show you how things “fit together.” The book will then provide further reference. In addition it will be a source for questions and problems.

Some of you expect to practice problem-solving in lecture, but problem-solving is not the main focus of this class. I want you to understand things, not just be able to “plug and chug.” This is clearly reflected in the way you will be tested—take a good look at the exams in the back of the syllabus. Close to half of the questions on each exam are not the traditional, quantitative problems you may have seen before. The solutions to many of these don’t involve even a single equation. Rest assured, the sections and homework assignments will offer ample opportunity to sharpen your traditional problem-solving skills. The lectures are meant to stimulate your thinking, to further your basic understanding. I guarantee that a better understanding of the concepts will improve your problem-solving abilities, whereas the reverse is not necessarily true. Here is what I think of some other answers given:

The purpose of the lectures:

| <i>is to</i> | <i>is not to</i> |
|--|------------------------------------|
| Be inspiring/stimulating | Cover all you are expected to know |
| Clarify the book | Practice problems |
| Explain confusing issues | Introduce the material |
| Make you think critically | |
| Give you lots to think about | |
| Spark further interest in the material | |

4. *What do you expect the book to do for you?*

The following answer best reflects what I have in mind for both the book and the lectures: “I expect the book to be a kind of basic instruction manual, detailing the topics to be discussed, while the lectures will hopefully take this material and analyze it in a way so that I will be able to look at *any* problem intelligently, not just those from the book or the test.”

Here is what I think of some of the answers given:

The purpose of the book:

| <i>is to</i> | <i>is not to</i> |
|---|----------------------|
| Provide background for lectures | Clarify the lectures |
| Be a resource for detailed explanations | |
| Be a reference and study guide | |
| Offer practice problems | |
| Teach problem solving | |

5. *How many hours a week do you think it will take to learn all you need to know from this course?*

If you include lectures and sections, the answer should be somewhere in the 10–15 hrs/week range. By putting in any lesser amount of time, you will diminish your prospects of earning a good grade.