How to Take Notes
Specifically in Physics Classes

- Don’t try to write down everything the instructor says, just listen for key words and phrases, like “Gauss’s Law,” or “we are assuming a point charge,” or “this is a long line that we think of as extending to infinity in both directions.”

The instructor in a physics course does only two kinds of things: (1) presenting and discussing laws of physics; and (2) working examples that apply the laws.

- If the instructor is discussing a law, pay particular attention to the general mathematical statement of the law, the discussion of the meaning of the various things that appear in the law, and so on. You may have to write a few words covering the gist of each sentence spoken in that case.

- If the instructor is working an example, pay particular attention to the specific general law being applied, and the assumptions made (e.g., “this is a point charge,” or “this is a uniform sphere,” etc.). Then copy down all the mathematics and every diagram drawn, as clearly as you can. In working examples, physics professors do not write unnecessarily on the board. It is safe to assume everything written on the board is important, vital and necessary to work the problem, including the general statement of the law with which the example begins, all diagrams that show the relations between the physical quantities that appear in the law, and so on. If you leave out any mathematical step, your notes will not make sense to you later. Similarly, if you leave out the law being applied, and any assumptions made, your notes will not make sense later.

- Your classroom notes are generally not neat enough and clear enough to use for study. After each class it is usually necessary to make a new set of notes covering the lecture, in neat, clear handwriting, with all steps clearly shown and explained to yourself by yourself. In making this second set of notes you can use the textbook to add the “missing words” about what the
law means and is useful for, and for adding additional examples applying the same law. To get ready for an exam it is usually only necessary to go through this second set of notes, a kind of textbook of which you yourself are the author, careful step by careful step. When you made the second set of notes you should have reasoned through every logical and mathematical step required to reach the conclusion from the beginning. Since you understood it when you did it (and only by doing it will you ever understand it), it is generally necessary only to read over the notes again and reinforce your understanding of the concepts and steps, to get ready for an exam.

- Note that just reading the text over and over will not work. You didn’t write the text, and reading is a passive act; you don’t do logic and math when you read. Only when you made the second set of notes did you do the logic and math you need to know. Therefore, if the only way you “study” is to read the text, you didn’t study at all, and your test grades will reflect that