

# TWU Counseling Center

## How to Study Math & Physics

(Focus Group On Study Skills)

Physics and Math are Problem-Solving Disciplines. You must learn the underlying principles and connecting themes to solve the problems.

### I. Note-taking:

- A. Where you sit in the class may be important. Try sitting in the front half of the class.
- B. Preview the book before the lecture to see what is in the book. If you know the formulas are in the book you won't have to write them down during the lecture and can listen more attentively.
- C. Read the introduction and summary of the relevant chapters and look at the section headings and sub-headings.
- D. Check over notes of the last lecture while waiting for the lecture to begin.
- E. Take the book to class. The professor may refer to something in the text.
- F. Make notes of new words, new units of measure, statements of general laws, etc. Study notes and related text material IMMEDIATELY after the class to reinforce your learnings. This should be done within 24 hours.
- G. During the lecture, question what is being said continuously whether or not you verbally ask those questions.
- H. Look for important themes and principles.
- I. If note taking leaves no time for thinking in class, copy only the key steps and fill the remaining steps in after class.

### II. Study Methods:

- A. Examine the information given in the course syllabus carefully before studying.
- B. Build up ability to read this kind of material. Do a little bit every day (mind building is like body building).
- C. Set aside one hour daily per course in this area and read. When the hour is up STOP. You may have only read 5 pages but you will know what is in them. You can then leave your bigger time blocks for your reading courses.
- D. If you do one problem a day for each course you won't be left with 40 problems to do on Sunday night.
- E. Go by and see the professor during office hours. Usually they welcome this. When the professor gets to know who you are from the sea of faces in a lecture class, your questions will be looked at as valid and your interest will be noted.

- F. Rather than skipping the sample problems in the middle of the chapter, work them. They help in understanding the logic of the chapter.
- G. Read the assigned problems before reading the chapter. That way you will know what to focus on. Typically when problems are assigned, it is the concepts in the problem which need to be learned.
- H. If you work a problem and get it wrong, it is just as important to know what you are not looking for as well as what you are looking for.
- I. Answers in the back of the book may be a bad crutch to use. Often there is more than one way to do a problem and your answer may be just as legitimate as the one in the back of the book.

III. Test Preparation:

In the week prior to the test:

- A. Quickly review notes and check syllabus
- B. Reread quickly your solutions to the homework problems
- C. Quickly review assigned chapters
- D. Generate a list of themes, principles, and types of problems you expect to have covered in the test.
- E. Review actively. Try to look at all possible ways a principle can be applied.
- F. Get as much information about what is important from the professor. Look at the way the professor works through problems.
- G. Don't cram the hour before the test.
- H. Go into the test thinking you are the Greatest Mathematician or Physicist alive and that you have been called in to solve these problems.
- I. Look through the whole test first and do problems you can answer first. Make sure and check the point value of the problems in the test.
- J. Don't look at the test as a measure of your ability, "The world has been stumped for hundreds of years on this topic so why should I be able to solve it on the first try?" or "I could have gotten another set of problems which I could have answered: I didn't know these but I know how to do others," or "It's not that I am not cut out for physics, it is that I didn't know these particular problems." If you blow a test go to the professor and ask, "What is it that I'm missing?"

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<b>TWU Counseling Center Locations:</b>	<i>Denton West Jones Hall 940-898-3801</i>	<i>Dallas-Parkland FPH 120 214-689-6655</i>	<i>Dallas-Presbyterian DPB 16 214-706-2416</i>	<i>Houston Suite 2250 713-794-2059</i>
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