

DEVELOPING GOOD STUDY HABITS

Cramming and Test Anxiety are Signs of Poor Preparation.

Have you ever been taught **HOW** to *study* or how to *learn*? Probably not.

You and I each have responsibilities in this course. My responsibility is to teach the material to you, which I do through lectures and by making myself available to help you outside of class. *Your responsibility is to study and successfully complete the assigned homework.* Neither I, nor anyone else, can learn for you. You will not learn from even the *best* teacher if you do not study and put in the proper kind of effort.

One of my primary responsibilities to the university and to you is to ensure that our class time is used as optimally as possible. For example, for the sake of the class as a whole, I might not answer every question asked in class. The following example will illustrate. Suppose the class comprises 30 students. If my answering one question helps only 20% of the students, then 24 students do not benefit! Instead of answering that particular question in class, the time might be better spent if I cover a more difficult concept, thereby benefiting most of the students. This is where another of your responsibilities comes in — to *seek help outside of class when you need it.*

Successful study results in learning. It requires practicing each of the following:

- ♣ *attending all lectures, being mentally engaged during those lectures, and taking good notes,*
- ♣ *reading and studying the text,*
- ♣ *reading and studying the lecture notes and handouts,*
- ♣ *coming to class prepared, having reviewed the previous day's notes,*
- ♣ *working through and successfully completing all examples and all assigned homework problems.*

Many students err by doing only one or two of these and neglecting the others. As examples,

- § Some students study from the lecture notes but not from the text (or *vice versa*). If it were enough to merely study from one but not from the other, then either the text or the teacher is unnecessary. However, although the lectures and text overlap, they also supplement one another, so you should study both to successfully learn the material.
- § Some students try to do the homework without studying (or *vice versa*) or by attempting to mimic the examples. These do not facilitate learning as one does not generally learn concepts in these ways.
- § Regarding regular attendance, consider that missing four lecture hours is to miss one-tenth of the term; missing eight lecture hours is to miss one-fifth of the term.

SO HOW DO I DO IT?

The main goal of many students is to finish some of the homework on time. If you do this, then you do little more than 1) try to do the homework, and then 2) study a day or two before the exam. When the exam arrives, you remember very little and instead of reviewing, you end up cramming, which is an *extremely ineffective* way to learn. This often leads to what students call “**MAIH ANXIETY**” or “**TEST ANXIETY**.” Whatever you call it, it is not the **cause** of poor exam performance; it is probably a **symptom** of poor preparation. Begin by telling yourself that test anxiety is not the reason you do poorly on exams; instead it is poor preparation (which produces anxiety) that results in poor test performance.

An effective way to study is to learn *before* and *while* you do the homework. I recommend that you adopt the following study habits in **all** your courses. By doing so you will simultaneously make more efficient use of your time and more effectively prepare for exams (including the final). Former students of mine (your peers and predecessors) who adopted these habits have attested that both their understanding and grades improved, in my courses *and* others. Perhaps the two worst habits are: 1) falling behind in class, and 2) not studying properly. Therefore, you should be *proactive* (by staying on schedule) rather than *reactive* (trying to get caught up). By staying on schedule, you will find it easier to prepare for exams. Furthermore, students who study properly should never have to cram, but merely review, for exams.

To monitor your progress in developing good study habits, check the following items as they become habits for you.

▷ **Begin studying the material (lectures and text) the same day it is presented.**

- ⊕ The material will be fresh in your mind, and doing so will help keep you from falling behind.
- ⊕ If you don't study immediately, the subsequent lectures will make little sense, and you'll continue falling behind and increase your stress and anxiety. Ultimately either you'll never get caught up, or you'll resort to cramming.
- ⊕ Reading is not the same as studying. *Studying involves careful and contemplative reading.*

▷ **Rework all the instructor's and text's examples successfully *before* starting the homework.**

- Υ If you cannot complete those examples on your own, then you are not ready to attempt the assigned homework.

▷ **Begin doing the homework immediately after doing the above.**

- Ω The material will be fresh in your mind, and doing so will help keep you from falling behind.

▷ **On weekends, review the week's material and redo some of the past homework problems.**

- Σ The benefits are twofold! You are simultaneously 1) keeping the material fresh in your mind, and 2) preparing for the next exam. Consequently, when the next exam comes, you shouldn't have to stay up late cramming! A brief review should do the job.
- Σ This will also help you determine any difficulties or questions you might still have, giving you time to get help before the exam.
- Σ You will find the problems easier to do the second time, and you will have greater confidence on exams.

▷ **Are you able to complete all homework problems successfully without assistance? If not, then you are not prepared for an exam.**

- Ψ Many students err by thinking it is enough to attempt *some* of the homework problems. Right around the last day of withdrawal, I often hear individuals say something like, "*I don't understand why I'm failing the course. I understand it when you do it.*" After I quiz such students, they almost always admit that they are doing only *some* of the homework and working only some of *those* correctly. The problems your instructor assigns are not mere suggestions.
- Ψ Many students err by relying on aid (from notes, the text, mimicking examples) to complete the assignments, without acknowledging such dependence. This is especially true of a student whose main concern is to finish the homework rather than to learn the material. If you rely on aid to finish a problem, then you haven't learned the material and you are not prepared for an exam.
- Ψ A typical student generally performs poorer on exams than on homework. A student who averages 80% on homework, for example, will typically score lower on exams.
- Ψ When studying, your ultimate goal should be *to be able to do all homework problems successfully without aid.*
- Ψ Completing all assignments successfully without aid will increase your confidence on exams.

▷ **Remember to also study the material.**

- ⊖ Although successfully completing all homework is crucial, doing so still might not fully prepare you for exams. You also should be reading and studying the material (notes and text) to fully understand the **principles** and **concepts**. What works for one problem might not work for another, so understanding the concepts is important.

▷ **Use the "Study Buddy" system.**

- Ξ Study regularly together, but your goal should not merely be to complete the homework. Your goal should be to work and learn *together and from each other*.
- Ξ Quiz each other and challenge each other to improve. Challenge each other to explain their steps and also to use proper mathematical notation. **Mathematics is a tool of your profession. Learn to speak it and write it correctly!**
- Ξ Be very careful not to pick up bad habits from each other. And don't quit until each member of your group fully understands the concepts and how to do the problems.

▷ **Make flash cards to learn formulas, True/False concepts, definitions.** Review them periodically.

▷ **Get help early if you need it.**

- ☺ If you struggle with a problem or concept and simply can't get it, seek assistance.
- ☺ Don't wait until a day or two before an exam to get help. Get help early enough to allow time to work through several problems to ensure that you understand the concepts.

Finally, you alone are responsible for learning the material and for your performance.