Math & 141
How to Study Precalculus

Unlike algebra, Math & 141 is not a procedure class. The purpose of this course is **not** to teach you how to solve certain types of equations and perform certain algebraic processes. Certainly, we will do some of that in this class. **But primarily, the purpose of this class is to understand functions, their terminology, their notation, and their applications from many different perspectives.**

In an algebra class, you might learn one or two procedures in a 50 minute class period. The homework then consists of progressively more difficult problems in which you practice these procedures. In this class, we will explore a group of related concepts in class. The homework will consist of doing many different kinds of problems exploring these concepts from various perspectives. **There will not be examples of every type of problem in the book or in class.** For many students, their sole method of studying math is: for each problem, find a similar example in the book or class notes that follow the method of the example. Such a method will not be helpful in this course.

In order to be successful in Precalculus, you need to learn how to study mathematics. This means **you must focus on understanding the underlying concepts, vocabulary, and notation.** **Being able to do the problems in the book is not the purpose of this course.** When you are out of school, no one will ever give you a sheet of math exercises to do. You must be able to determine what mathematical concepts apply to a certain problem and then determine the procedure that might be helpful in analyzing the problem. You must look at the homework exercises as a means for assessing mastery of the concept rather than the purpose of the course. One of the most important aspects of this kind of learning is being a **critical reader.**

**Critical Reading:**

**The purpose of the prep pages is to help you work on your critical reading skills.**

- You should read through the section the night **before** we discuss it in class. You will not necessarily understand everything you read. But it will help you be a more efficient note taker in class. Many times I will write something on the board that is straight from the book because I want to be able to point to certain parts of it and emphasize things. You should not be copying things down that are already in the book. You should instead be writing down the ideas I am emphasizing regarding the statement in the book. It can be helpful to have your book open in class, and write such comments directly in the book.
- You should read your math book with a pencil, eraser, and paper at your side.
- You should list new vocabulary, definitions, big ideas, and notation as they are introduced.
- Pay close attention to the tan boxes with a dark green line down the side—these are the big ideas of the chapter. Take notes on their content.
• Pay attention to anything in bold type. The author is trying to get your attention. Write these bold statements down in your notes. Think about why they are bold—why does the author emphasize them? Be sure you understand their significance.
• You should go back and read the section thoroughly after we’ve discussed it in class.
• After you finish the reading a section, go to the chapter review at the back of the chapter. Compare what you’ve written down to the list of important concepts the author provided. Be sure your notes include all of the listed concepts.

Note-taking:

Many students are overwhelmed by note-taking in precalculus. I have heard many students say: “You go too fast. I can’t write down everything you say.” Of course you can’t. The skill is called “note-taking” not “lecture transcription.”

• You should not write down definition, notation, and concepts that are already in the book. Note what we are discussing so you can refer back to your text later.
• You should write down the comments I make about “how to remember this...” or “watch out for this mistake...” or “the important part about this is...”
• You should certainly write down examples that are not from the book. I generally indicate in class whether an example is one from the book, one from the exercise sets, or one that is not in the book.
• You should not write in complete sentences.
• You should write phrases and abbreviated words. Just be sure you know what your abbreviations mean.
• If you are not able to take useful notes in your classes, you should take a study skills class since this is a critical skill for college success.

Study Groups:

• Most successful math and science students regularly study in a group.
• In successful groups, the group members have read the book and worked on the problems before getting together. The group time is spent discussing the ideas that are confusing and helping each other with the hard problems.

Use Your Resources:

• Check the class web-site daily for handouts, solutions, due-dates, links to math resources.
• Ask questions in class.
• Go to the MARC.
• Come to office hours with specific questions. It is impossible to meaningfully respond to “I don’t get any of this.” You need to come in with questions like “I don’t understand how you got from A to B here.” Or “I am having trouble with the notation for...”
• Refer back to this handout regularly to remind yourself of the suggestions here.