



MATH V21B • TIPS FOR SUCCESS

Welcome to Math V21B. This course assumes a strong background in algebra, trigonometry, and knowledge of the basics of differentiation and integration. The emphasis is on developing critical thinking and problem solving skills, so you will be exposed to many math applications (*e.g.*, word problems). Upon completion, you should be ready to take third-semester calculus, linear algebra, differential equations, and engineering physics courses.

Attendance. This is very important in a sequential course such as mathematics. To understand each topic, students need to know what came before. We must move rapidly to cover about 34 or more sections in the semester (with tests and holidays, this works out to about 2 to 3 sections per week). Regular attendance on the part of every student is required to achieve this goal. The drop policy for the course is discussed in the **COURSE REQUIREMENTS AND GRADING** document.

Study Habits. You do not have to be Gauss (the Einstein of math) to understand mathematics, but you must cultivate good study habits. It is possible (although not desirable) to complete problems, yet *not understand the underlying concepts*. Improving analytical problem-solving skills is an important, but secondary, goal of this course. The principal aim is to instill an awareness of basic mathematical principles. Try these steps:

- The textbook sections to be discussed at the next class meeting are announced at the end of each lecture. When you begin to study, quickly scan the headings, pictures, diagrams, and captions in these sections. Then go back and read the text. Do not worry too much if you do not understand everything the first time; it is more important to see the material so you know what to expect at the next lecture. Write down questions that come to mind as you read. Then ask these questions in class (or bribe a classmate to ask them).
- As topics are discussed in class, study the appropriate paragraphs more carefully. Work the examples on scratch paper. Don't look at the answer right away. If you get stuck, look at the solution (one line at a time) for a hint. You may have to study a text section or example repeatedly before it begins to make sense.
- Try the homework problems *after* you study the text and your notes. Some students start with the homework problems, thinking that if they find similar examples and just plug in numbers, they save time because they don't have to read the text! Usually the problems are a bit different and this method doesn't work. Even if it does work, your understanding will be incomplete, as the tests will soon demonstrate.
- *Before* the homework assignment is due, ask other students to check your answers. Work in groups (for moral support) and come to Homework Club (for help or if your group can't agree on an answer). The answers to most odd-numbered problems are in the back of the book.
- To prepare for tests, practice by working the examples and additional problems in each section. Many of the test problems are taken straight out of the text.
- *Plan* to spend 10 to 15 hours per week outside class (and perhaps more) studying mathematics.

Problem Solving. If you don't see a way to tackle a problem after 10–20 minutes or so, go to the next one and come back to it later (the next day, if possible). If this doesn't work, then get help (see Getting Help below). Bring your attempted solution to your helper (tutor, instructor, etc.); do *not* arrive with a blank sheet of paper (or with no paper at all)! At the very least, draw a completely labeled diagram and/or list the known and unknown quantities.

Getting Help. There are many ways to obtain assistance! Here are just a few ideas to consider:

- Form study groups and learn with your classmates (but don't copy each other's work). Very few people can handle the volume and complexity of material for this class working alone. Even if you are bright, explaining concepts to other students will strengthen your mastery of the subject (those of you who tutor already know this). **This is the most effective single method you can use to enhance your comprehension and understanding!**
- Attend the Homework Club (see the **COURSE INFORMATION** document for my schedule). Make an appointment if you are unable to attend the scheduled hours. Often I am available at other times as well. Unless I am swamped or in class, I will help you whenever you can catch me!
- Try the Tutorial Center, located on the first floor of the LRC. Even if no tutors are available, it is a popular meeting place for the "brains" in your math classes. The chances are good that you will find someone there to help you.
- Ask for help from friends or relatives who have taken the class previously.