Strategies for Success in Math 105/115/116

**THE** most important thing to consider when signing up for any of these courses is your math placement score. If you feel you have placed into the wrong course, please ask your orientation advisor to send you to the Math Placement Advisor. The Math Placement Advisor will be able to help you select the most appropriate course.

When considering Math 105/115/116, we know that you may have had classes in the past with the same name—*i.e.*, Precalculus, Calculus, even AP Calculus. Despite your previous experience, you should not expect any U-M math class to be an “easy A.” Most likely you will find both the format of the class and the expectations of the course different from your previous mathematical experiences.

Some of the differences that you may find between your previous courses and Math 105/115/116:

- You will be expected to read the lesson before coming to class and expected to work in groups to solve problems during class—and, you may be asked to present solutions at the board. Instructors will not just “lecture.”
- Your instructor will not necessarily work examples from the book—those are gifts to you from the book authors.
- Examples in the text are not “templates” for problems in the book—BUT, the reading does prepare you for solving problems from the text.
- The emphasis in all of these courses is on *understanding*—understanding concepts, understanding how and when to use appropriate techniques, gaining confidence for tackling new problems, and knowing how to ascertain when your approach or answer is reasonable or correct.
- Group work is GOOD. Mathematicians collaborate. Not all problems can be solved in three minutes or less. Working with others provides opportunities for different approaches, multiple insights. Don’t miss out on the opportunity to share ideas and different approaches to problem solving!
- You will often (in class, on homework, and on exams) be asked to *write* and to *interpret* your answers or mathematical expressions. Being able to express yourself in mathematically correct but practically understood terms is important for many of your future goals, **and** that is one way we can assess your understanding of the concepts of our courses.
- When appropriate, new topics are presented using the “Rule of Four”—graphical, numerical (tables of data), verbal, and symbolic representations. You may find that some approaches are more accessible to you than others. If one approach is not working for you, try another. There are many ways to think about solving any problem....
How to succeed in Math 105/115/116:

- Read the above and embrace the differences.
- Go to and actively participate in every class. If you must miss a class, stay in touch with your instructor and rely on a class buddy for notes and/or go to your instructor’s office hours for help. Do not fall behind!
- Read each section before it is to be covered. You don’t need to understand everything, but familiarizing yourself with the topic ahead of time gives you a big advantage.
- Do all of the web homework. Web homework is 5% of your grade!! Plus, it gives you instant feedback and allows you to ask the instructor for help when needed. Never write your instructor from web homework with something like “How do you solve number 2?” Explain what you have tried, and ask a specific question about what doesn’t appear to be working with your approach. There are no extensions on web homework due dates, so be aware of the due dates for your section.
- Take team homework seriously. These problems are generally more difficult, but quite manageable for 3-4 students working as a team. The concepts from these problems are very likely to show up on exams. We know that finding time to meet is difficult, but when several minds meet, the insights and outcomes can be phenomenal.
- Don’t expect exams to look like web homework or in-class work. When an instructor (or a homework set) is dealing with a particular topic, the work is concentrated on that topic. Exams often ask questions that encompass ideas from several sections. The web homework and in-class work (and team homework) DO help to prepare you for exams, however.
- Beginning at least a week before an exam, take time to work some of the previous exams—with the correct mindset and under “test-like” conditions. That means: download a previous semester exam (without solutions!), set aside 90 minutes (or 2 hours for a final) when you can concentrate on the exam without interruptions and without the book. Watch your pacing—move on to another problem when you are stuck, but don’t leave a problem without reading all parts—sometimes part (b) or (c) may help you to think about an earlier part of the problem. Do not look at the solutions until you have grappled with the exam on your own. If you find that certain problems are causing you concern, go back to that part of the text for a review or see your instructor for help. Do NOT expect a previous exam to be a template for the upcoming exam, but do know that the upcoming exam will test the same concepts and skills that were tested on previous exams.
- Know your needs and know your resources for help! Meet with your instructor for office hours or arrange an appointment. Go to the Math Lab—find people there that are in the same course and talk with them as well as the math lab helpers. If you are having a problem, either with the course or with your personal life, let your instructor know! We can’t work with you unless we know what is going on.
- If you have a problem or concern that you do not feel comfortable discussing with your instructor, see the course coordinator (name is available from the course website) or your advisor.
- Do not be anonymous! Know that we are here for you, not against you. There are many opportunities for help, and we want to see you succeed!