

A Rough Guide to Surviving Mathematics Classes

Professional Classroom Behavior

- Arrive a little early, and never leave before class is finished.
- Hit the bathroom between classes, not during them.
- Turn your cell phone and pager OFF! The sound of a phone during a lecture is rude, offending not only your instructor but everyone else in the class. And of course, no “texting” for the same reason.
- Never plan to leave class to take a call, or really for any reason except imminent death, illness, etc.
- Sit towards the front. There’s less distraction from others, and you can see all the instructor does.
- Stay mentally active during class. Contribute to problem solving and discussions. Taking notes is essential for this. Class time is precious; don’t waste it.
- Keep conversation with classmates to a minimum, and always on the subject of the class.

Visiting your Instructor/Professor

- Do it! And not just on days before tests. Go to your instructor’s office for the first time no later than the second week of class. Your instructor can give you personal attention you can get in no other way.
- If the instructor’s posted office hours do not match your free times, talk to him or her! That’s why we all include the “and by appointment” option.
- Come to discuss study and survival tips as well as advice for the subject matter. Your instructor knows how to survive college mathematics courses, so ask!
- Getting to know your instructor can pay off later, or your instructor might even become one of your informal UMKC mentors. Since he or she will know you, when opportunities turn up, you could be recommended. This is part of “networking”.
- If you miss a class, contact other students to learn what you missed and get copies of their notes, because their notes will accurately reflect what actually occurred in class. Student “networking”.
- Don’t show up expecting your instructor to repeat the day’s lecture for you or to do your homework for you. If you can, come prepared to share your attempts on problems you have already tried. But, in any case come by! We want to give you individual help, tailored to your strengths and weaknesses, and knowing your mistakes helps us to do so.
- As much as possible, accept the rules of the class and follow them. Don’t make a habit of asking your instructor for special considerations, changes to the structure of the class just for you, and so on.

Being a Professional Student

- Always attend class. Attendance is highly correlated with good grades. It's also a hassle to find out what you missed. If you cannot attend, it can be polite to email your instructor about your absence.
- Keep all your notes, assignments, exams, handouts, and everything else related to the course. And, keep it all in one place, perhaps a three-ring binder.
- Always do all assignments. Any honest attempt on a submitted assignment is better than none! Also, do as many of the suggested problems as possible, even if they will not be collected for a grade. Mathematics is learned by doing it as much as possible.
- Meeting the deadlines and other requirements of the course is your responsibility, not your instructor's. It is not the instructor's fault if you fail to hand in an assignment on time or miss a test. You are in charge of your study habits and class work. You are now a professional student.
- Write up your mathematics homework as well as you can, and learn from the comments you get back about it. If an instructor, or anyone for that matter, doesn't understand what you write, you must realize that it generally is your fault as a writer. Every writer knows this. Ask us about style and presentation.
- Also, we usually do not give make-up tests after the scheduled test time. With sufficient warning we may give a test early, but only rarely. Creating a second test and proctoring it doubles an instructor's work load, and is an unreasonable expectation except in rare occasions. We usually address this question of missing a test by dropping a lowest test grade, or by some similar structural grading plan.
- Budget time to study each subject each day, avoid distractions, go to the library for a quiet space, etc. Steal the habits of successful students around you!
- Remember that in mathematics, and in college in general, you should not expect to understand everything immediately. If you can grasp 75% of it at any given time, then you are doing well. You'll fill in the other mathematical parts later as you continue to work. Every student who has survived knows this.
- Hang in there! Be persistent! Endure! Good students muddle through when the going is rough; weak students give up. Remember the grade at the END of the semester is what matters. Even if your current grade is poor, talk to your instructor to see where you actually stand in the long view. And never, never drop a mathematics class without first discussing your grade with your instructor.

Mathematics Studying

- Read your notes, so you'll know what the instructor thinks is important, and what the tests will cover.
- Read the text! And not just the examples like the ones for homework. Really try to learn the material. That's what professionals do.
- Visit the Math & Science Resource Center for tutorial help, or study with a group, after seeing your instructor!
- Write out a bulleted outline for an exam, or work with the one provided by your instructor, and for each bullet point write out what is covered, where you find it discussed in the text, and which problems in the exercise sets are associated with those topics, and do a sample problem or two, etc.

Mathematics Note-taking Advice

You'll have your own style of notetaking, but these tips can help, even if at first this seems like a lot to do!

- It's a good idea to keep all your notes for a single class in a single spiral notebook. On each day, start your notes with the DATE. Later, you might want to number the pages in your notebook.
- Take active notes during every lecture. Writing helps you remember what is happening. Improving both short term and long term memory of the lecture. Without notes, half of what the instructor says is forgotten in 15 minutes!
- Write down everything that is written on the board, even if you think you know it. What is covered in lectures often includes not only what is in the textbook, but additions your instructor thinks are useful or enlightening. If your attitude is that "It's all in the book", or "I already know this", you deny yourself the chance to deepen your knowledge and you nullify the advantage of being in the classroom.
- In particular write down any side or scratch work your instructor might write and then erase.
- Having a record of fully-worked out problems or statements in your instructor's style is tremendously valuable, since after all, he or she writes your tests.
- Also, record not only what is written on the board, but what the instructor says as well. Here's where your instructor can share how to think about problems, give informal tips on learning the material, and so on. It is one of the main reasons for coming to class! Mathematics is only learned by doing it, but it is certainly helped by watching an expert talk his or her way through a problem or a sequence of ideas.
- Write down questions that come to mind, or other comments or marks of your own. If you omit these, when you finally review your notes later (after several other classes or events), you will not remember what parts puzzled you or generated questions, and you cannot then ask your instructor about them.
- If you miss a class, leave some blank pages for the notes that day. When you get a copy of another classmate's notes, copy them in your own handwriting into these blank pages. Copying them yourself allows you to think through the events of that missed class.
- What mathematics instructors write on the board is usually an abbreviated version of what is in the textbook, so beware of abbreviating it further in your notes. Never abbreviate problems that your instructor fully works out.
- Learn correct notation from your instructor during class, and mimic that notation in your notes. Note-taking is an easy and daily chance to improve your ability to write mathematics in correct notation and with correct grammar. This is of enormous importance when you come to write up homework or do work on a test. For instance, the proper (and necessary) use of equals signs, and how mathematical arguments are organized and then written up, are two examples of what you can learn.
- Everything mentioned in class should appear in your notes: problem assignments, due dates, test dates, and more.

Mathematics Homework Advice

- Usually, write up the problems in the order they were given. This is convenient for grading.
- Check that you are doing the correct problems!
- Then be careful not to miscopy the problem.
- Always include the problem statement, sensibly and conveniently abbreviated.
- Indicate, by writing “Solution” or something like that, where your answer begins. Also use some kind of symbol or line to indicate where the answer ends.
- Explain yourself! Yes or No answers are insufficient, even if the problem is worded that way.
- The more you let your instructor see how you are thinking, the better advice you can get, and the more credit you can earn for a correct process even if you have some silly mistakes.
- Answer all the questions asked. Finish all the problems.
- Use as much space as you need to draw any pictures or graphs; clarity is key.
- Use proper notation, equals signs, etc. Follow your instructor’s advice on this, especially what he or she writes on your homework.
- If you answer a writing question, use every means of explanation at your disposal, including not only language, but idea pictures, diagrams, graphs, symbols, etc.
- Don’t jam your problems together. Saving space is not the idea. Use all the space you need to make your argument, and leave spaces between problems.
- Isolate scratch work off to one side, out of the stream of the main problem reasoning.
- Graphs: Label at least one tick mark on each axis. Don’t use more tick marks than you need.
- Use English to connect the parts of your work. Working out a problem is writing a short essay in mathematics, with lots of symbolism, but nevertheless in English!
- Review and keep every returned homework assignment, quiz, and exam, and study your own mistakes. Learn what to do instead. Working and getting back homework is not about collecting points. It is about improving your mathematical skills, your presentation, your style, so that you can perform better in all environments.
- We read what you write. If we don’t understand it or if we follow your logic to a wrong answer, that is your responsibility. Don’t expect your instructor to use his or her knowledge and experience to guess what you might have intended to do. You must write what you intend, and that takes practice, doing it wrong, and getting better over time. We can help you become a better writer.