

GENERAL, FIRST-TIME ADVICE

We asked the contributing professors for words of advice to instructors who are teaching this course for the first time or for the first time in a long while. Their responses can be found on the following pages.

Tim Chappell, Penn Valley Community College

1. Create an atmosphere of learning in the classroom from day one. Relate to students some of your experiences in learning mathematics, including both good and bad. Students need to see you as a fellow learner as well as an instructor. They also need to see you as a person. Inject your personality into the course. Use jokes, personal stories, or mathematical games to keep it interesting.
2. Put students into groups. Even if you don't use group work extensively, group them on the first day. Have them make introductions and complete a brief group assignment. Encourage the groups to take advantage of the few minutes before and after class starts to check homework with each other.
3. Carefully develop a list of homework problems. The assigned problems should match the level and type of problems you expect students to master. Avoid large homework sets. Instead, I give the students a small homework set that I call journal homework. To receive credit for these problems, the students must work each problem step by step and provide explanation for each step. I select odd-numbered problems from the text for journal homework so there are answers in the back. This homework is graded full or no credit. Students learn quickly that an answer with no supported work is not an acceptable answer. This helps them to include steps on test work which helps them earn partial credit on the tests. If students struggle with the journal homework or if they just want more practice, they are encouraged to work additional problems in that section as daily homework.
4. Require students to make corrections to tests. This reinforces the fact that any skills or concepts not mastered now will come back to haunt them in the next math class. I constantly remind students that the goal of this class is not just to pass, but to understand as much as possible so that they can be successful in college algebra and higher courses. Students should not only rework the problem successfully on separate paper, but they should also explain why they missed the problem the first time.
5. After the first test, I have students do some self-analysis by answering three questions. How did they prepare for the class daily and for the test? Does the test score reflect what they know and can do? Are there changes that they need to make? Students are not graded on the content of their responses. I read and keep these papers. I find the papers helpful when a student comes to my office for help. I can ask them if they have been successful in the changes they needed to make.
6. Students lack basic survival skills such as organization and identifying the key concepts of the course. I require students to keep journal notebooks containing notes, daily homework, journal homework, tests, corrections to tests, and concept reviews. I provide a concept review for each unit, outlining each of the concepts that they are responsible for learning. Key concepts are in bold print, emphasizing their importance in the course. Students are encouraged to cross-reference between the journal homework problems and the concepts in the concept review.

Nikki D. Handley, Odessa College

1. Try to give students a set of steps for working problems. This often gives them a starting place on their own. Otherwise, they get frustrated wondering where to begin on each problem.
2. Repetition: have students work problems the same way again and again. Have them tell you the steps orally on how to work a particular problem. If they can see it and write it and hear it and say it, it tends to make a larger impact.
3. Carefully define and explain like terms and that you must have like terms to add or subtract. However, in multiplying and dividing, anything goes—like or not.
4. Walk around the room while students are working problems and ask students individually if they have questions. They are more apt to ask for clarification on a small step while you are right there by them.
5. Clarify the following on a regular basis: equation and expression, term and factor, associative law and distributive law.
6. Use different colors of chalk or markers when working problems. This helps them see each of the steps. I show division in red and addition or subtraction in blue or purple all semester long.
7. Have patience! Point out places where mistakes are commonly made and explain to students why it is wrong.

Matthew Hudock, St. Philip's College

1. Find a full-time faculty member who is teaching the same course(s). See if you can use him or her as a contact to ask questions about the course or about departmental and/or college policies.
2. Get a timeline, sample syllabus, and sample tests for the course either from the department or from your full-time faculty contact person.
3. Get a list of all paperwork details and administrative details that are due during the course of the semester and the associated due dates.
4. Discuss with your faculty contact person the student population that the college is serving. Find out the focus of the school you are teaching at (is it a feeder school to a major university? Or is it mostly a vocational/technical school).

5. Discuss the placement test that the college/department uses with your faculty contact person. How good of a job does it do? If you find a student that is misplaced, how do you get that student in the right place?
6. Find out the passing rates and dropout rates for the course(s) you are teaching.
7. Make sure you bring several different colors of chalk or markers to class (sidewalk chalk works great, but you'll have to experiment with the different colors to see what works best on the board).
8. Be on time, do not let the class out early, and be well dressed.
9. Return graded papers to your students by the next class period.

Ben Mayo, Yakima Valley Community College

1. Remember that although your students don't ask a lot of questions at first, they may not understand everything you are telling them. Students frequently feel overwhelmed when dealing with math and therefore aren't able to process new information very quickly.
2. To help make students more comfortable in the class, I joke with them that the more questions they ask, the more I get paid. In other words, I do all I can to encourage them to ask questions.
3. Don't assume that students have retained everything that they learned in their previous math class. In fact, at the community college level, I may have many students who haven't taken courses for several months or even years, so they may have forgotten most of what they had learned previously. However, with patience on the part of the instructor, that information can be reawakened in the students' memories and they can go on to be very successful with the new course.
4. I once had an instructor tell us on the first day of class that he was there to weed the garden. I prefer to tell my students that I am there to turn the weeds into flowers. These students need encouragement and reinforcement; don't treat your students like they are stupid.

Malissa Trent, Northeast State Community College

1. You will always wish for more time to cover the material. Do not be lured into the trap of slowing down at the beginning of the semester to accommodate students who are not prepared for your course. These students must seek additional help outside of class. Slowing down generally doesn't benefit the weaker students in the way that you hope it will. The majority of these students need to go back to the previous course, if possible. You will find that slowing down at the beginning of a course will cause you great stress at the end of the course. You will have to cover four sections in one class period and that is neither fun nor productive.
2. Most of your students will not be able to work with fractions. It does not matter how many times they have worked with fractions in the past, they simply cannot deal with them. This is always a surprise to new math teachers since adding fractions is a 4th grade skill. Most of your students will skip fraction problems in the homework whenever possible or will require a calculator to combine fractions. When working algebra problems that include fractions, show every possible step every time.
3. If you have time, try to use games and other activities to engage the students. For example, when I teach factoring, I have my students play factor bingo. During this game, they factor 20 problems on average. They work in teams and enjoy the competition. If I just gave them a worksheet with 20 factoring problems, they would get bored with it and would not complete as many problems in the same amount of time.
4. You must collect and grade homework if you expect them to do it. I collect homework at the end of every chapter and grade it during the chapter test. Homework must be in a three-ring binder and must be orderly and neat. I pre-select 10 problems (usually two per section) and grade those.
5. I also give 3–5 problem quizzes every day at the beginning of class. These include simple problems that are from the current or prior chapters. Since the final exam is comprehensive, I find that the quizzes help keep certain topics from the beginning of the semester fresh in the minds of the students at the end of the semester.

Paul W. Lee, St. Philip's College

1. Time Management

I like to make sure that I am able to cover all of the objectives that are included in a particular course that I am teaching. Students are expected to know these objectives when they enroll in the following course, so I want to do my best to ensure they are prepared. The key to covering all of the objectives is to have a tentative course outline. I always prepare my tentative course outline before the semester starts. I begin by taking a calendar that includes all school holidays and I pencil in the days that I will be covering particular sections. I also include any other activities that may take up class time, such as test days, review days, etc. If I expect to finish the objectives for the course during the semester, the tentative outline that I create must include all sections that are to be taught in the course.

Once the semester begins, the tentative outline can be adjusted slightly. Some sections require more time, while others don't require as much. However, I try not to change the test days, if possible. I also make sure that I don't start falling behind. While it is okay to slightly adjust the material, I use the outline to keep me on track to finish all objectives.

2. Classroom

As we all know, students do not all learn the same way. There are questionnaires that students can fill out to assess their learning style. I like for the students to fill out a learning styles assessment and then let the students brainstorm on ideas that would help them learn based on their particular learning style. I prefer not to spend all classroom time lecturing. For math classes, lecturing is not usually the ideal method for most students to learn. I try to begin my classes by answering a couple of homework questions that were assigned from the previous class meeting. This is a good way to review the previous material before beginning anything new. I always limit this portion to the first 5–10 minutes of class. If not, students begin asking more and more questions which may cause us to fall behind on all the material that needs to be covered for the semester.

After answering homework questions, I begin the new material. I always like to allow the students to work some examples at their desk after I give instruction on a new objective. This gives students the opportunity to work a few problems while they have someone handy to whom they can ask questions. I allow them to either ask me questions or one of their classmates. Sometimes, I encourage the students to form groups to work a particular problem. It is important for students to get to know one another, so that they can study together or just have someone to talk with about the class.

3. Tests

When I first started teaching, testing was one of my biggest concerns. I was afraid that I may make tests too easy, too difficult, too long, too short, etc. I found that other instructors in the department were more than happy to share copies of tests that they had used. I did not use their tests in my class, but their tests did give me ideas about how many questions I should include on the tests and what type of questions should be asked.

Laurie Hurley

1. Relate algebra to arithmetic whenever you can. For example, when working with rational expressions, relate it to working with fractions. When we add or subtract fractions, we need a common denominator. Likewise, we need a common denominator when we add or subtract rational expressions. The connections abound; use them to your and your students' advantage!
2. Make sure you know what the knowledge and skills, which are prerequisites for the next level math course or the other content area courses for which your course is a feeder, are and which ones you are expected to cover.