

Teaching Statement

Sheng-Chi Liu

As a teacher, my goal is to share my mathematical knowledge with my students and show them that mathematics is a beautiful and useful subject. I hope that they will become interested in mathematics and pursue it further in the future. My approach to teaching is to explain the big picture clearly with supporting examples and to create a classroom atmosphere with mutual respect. I let the students recognize my willingness and openness to work with them.

The beauty of mathematics and real mathematical training lie in the path to answers. Many college students come to math classes expecting to collect some powerful rules or formulas that will give them the answer quickly. It is important to bring their attention from the final destination to what is behind the solution.

The students will learn more effectively while they actually pay attention to the lecture. It is my responsibility to make them believe that my lecture is much more valuable and will save them more time instead of reading the book by themselves or finding some private math tutors. I always review the course material before class. In class I try to present a well-organized lecture and also have clear board writing so that students are able to take notes. On my course evaluations, there were a lot of students who commented that my style of presentation was very organized and that I explained everything very well. I also emphasize the central themes and key points for each lesson. During class I frequently check for comprehension and let them have a chance to ask questions to illustrate their confusion; I also encourage them to ask questions at any time during the class. Students' questions are instant feedback that help me to modify my teaching on the fly. I try to make students feel comfortable asking questions and making mistakes in class.

Because students have different background, it is very important to make sure that everyone follows the class. This means that sometimes I should explain the same concepts or problems several times. Even with that, there will still be some people who will not completely get it. To fix this, I hold office hours regularly to help students individually and I also encourage them to make individual appointments with me as needed. I frequently receive appreciative comments from my students about my teaching as well as my accessibility.

“Learning by doing” is always a good strategy in studying mathematics. I believe that students should try to do the homework on their own first and then discuss with others about the parts where they struggle. It is good to have students doing as much homework as possible, but an undergraduate student will not spend his or her whole time on mathematics. I try to design suitable and reasonable homework assignments that help students master the material and relate to future discussion.

Usually I grade the homework or exams by myself for small classes. Grading their homework or exams also provides a channel to commute with students. I also post my solutions after tests so that they can compare their work with mine.

Encouragement will increase students' willingness to learn and make the teaching more effective. This could be done verbally or some other ways. I think that letting students know that I do care about their progress is good encouragement. One way I have done this is to point out what the student did in his or her work during my office hours or the discussion after class. Usually the students were very surprised that I could remember their name and work. On the other hand, I always think about the course goals before the course begins. With these goals in my mind, the course will be more consistent and the tests will be more relevant. As long as the students follow the class, they can expect what might be on the test. This gives the students more confident that they can get a good grade if they keep working with me. Very often I tell students some important concepts will appear in the test and students will make a great effort to learn them.

I think a teacher should always look for ways to improve his or her teaching skills. I have tried to modify my methods to accommodate the students according to their reactions. I also pay great attention to the students' evaluations and suggestions at the end of each semester. I think about their comments carefully and have tried to practice ways to improve them in the upcoming terms.

Teaching Experience

During the past 8 years, I have taught a variety of courses at the Ohio State University and Texas A&M University. The courses include all different levels of calculus, pre-calculus, business math, differential equations, partial differential equations, etc. A complete list can be found in my curriculum vitae. The classroom sizes varied from 20 to 100 students.