

TEACHING STATEMENT

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I have been being an instructor for 5 years at the University of Utah teaching 8-different undergraduate classes ranging from Quantitative Reasoning to Calculus. I consider myself to be a responsible teacher and a friend to the students. I believe a mathematics class can simultaneously be a class in problem solving, critical thinking, self assessment, and collaboration skills which are essential both inside the classroom and in the world at large. I view math education as an opportunity to convey my love of a beautiful subject to my students, teach complex problem solving, and provide experience in collaborative work.

First and foremost, my teaching is problem-based. Before introducing new concepts, I provide enough motivating examples to show where ideas come from. This allows me to engage the students during lecture. I often start with a specific example. By asking questions such as “Why do our known techniques fail in this situation?” “What is a natural next step to overcome these difficulties?” or “How can we generalize these ideas?” students are led to new ideas.

In addition to presenting problems, significant portions of my class periods are spent on supervised group work, an important part of a class for multiple reasons. Group work provides an opportunity for students to collaborate with their peers, actively solving mathematical problems and applying the concepts taught during lecture. For those with less experience, group work provides a non-intimidating atmosphere to work and gain confidence in problem-solving. I begin with easy questions to help students become comfortable with the concepts and definitions involved. For more advanced students, I provide additional challenge problems so that they stay engaged. During this time, I move from group to group checking on progress. Not only does this allow me time to interact with students and answer specific questions, it gives me the opportunity to assess how well a particular concept has been digested. This real time feedback is tremendously helpful, as it allows me to use the time I spend lecturing more effectively.

An equally important aspect of this in-class work is that it allows students to assess their own knowledge. This is an essential skill that I find many students are still developing. If a student does not fully grasp a concept, it becomes apparent as they work through the problems. As students realize their own weaknesses, they are more likely to pay attention during class, more likely to study on their own, and most importantly, are more likely to ask for help.

In addition to in-class work I also assign weekly homework and in-class quizzes. In the quizzes I ask basic questions while in the homework the questions are more involved. This way I make sure that the students learn the basic concepts and also get deeper understanding of the complex mathematical ideas.

In conclusion, every class that I teach I try to convey an appreciation of the importance and beauty of mathematics to my students. Yet I believe that a well taught math class has the potential to benefit students in less tangible but potentially even more important ways. Namely, the class should provide students with practice solving challenging problems, an ability to gauge their own understanding of difficult material, and a greater appreciation for the value of collaborative work. In essence, my goal for any course I teach is that students will develop not only a strong grasp of the material taught, but will also achieve greater confidence in their own abilities as students. My experience of teaching have led me to this philosophy, and I am continually searching for ways to better realize this ideal.