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Teaching Philosophy

I recognize that in every one of my classes there are students with varying levels of interest and mathematical abilities. My goal as an educator is to reach out to all of my students and assist them in becoming more confident and clear in their mathematical reasoning. I want each one of my students to enjoy their time learning and develop an intuition for how mathematics can be applied to their interests. I incorporate a few basic methods to provide my students with a positive learning experience.

Create a comfortable learning environment and establish connections with students

Every time I enter a classroom I try to create an environment where my students can feel comfortable and open to learn. I try to be very approachable and down to earth, so that my students never feel hesitant to ask a question. I frequently pause my lectures to allow students time to ask questions or add comments, and I encourage them to interrupt me as well. I encourage curiosity and build confidence with affirmation and support. I take time to learn my students' names, and their interests and backgrounds, and I try to design my lectures, examples, and assignments with that in mind. My students know that I care about their education. I make myself very accessible outside of class, and I actively encourage my students to attend office hours or to stop by at any time. I often have former students come to my office to ask questions or to get advice, and that is a relationship which I enjoy.

Make the material seem less scary and more relevant

Many students have preconceived notions of the difficulty of learning math or its usefulness. It is my goal to have each student leave my class with a more positive view and a better understanding of the subject than when he or she entered. I provide many examples and work with my students to solve difficult problems. I like to break down examples into smaller steps and allow my students to work out the details in order to build confidence. Once the problems seem manageable, I find that the students are much more excited about the possibilities of mathematics. I like to approach new concepts at various levels and from many different angles in order to reach out to a greater percentage of students. With each new concept or problem, I mention what I find interesting about it and how it is applicable to a broad range of interests. I frequently make connections between math and physics, engineering, music, and everyday life to show the value of a solid knowledge of mathematics and to inspire the class to look for their own connections. When possible I use presentations and demonstrations to pique the interest of my students.

Aid in development of independent reasoning and encourage original thought

An important goal that I have while teaching is to assist my students in developing a strong, independent reasoning ability and to encourage original thought. The ability to reason effectively is essential to a solid mathematics education. When solving a problem or presenting a proof I often pause to allow the class to discuss the next step. I ask leading questions to guide them and I explain my reasoning at every stage. I will often solve a problem several different ways and I encourage my students to come up with alternative methods. I try to motivate my students to think of creative ways to apply math to their interests. For example, I recently helped a student use the methods learned in my vector calculus course in a video game he was designing.

At the end of every quarter my students know that I cared about them individually and wanted them to succeed. I hope that they leave with a greater appreciation of mathematics and have grown as problem solvers, critical thinkers, and students of mathematics. I hope that they will look to their next math class with excitement as much as I look forward to my next teaching assignment. Although I have taught mostly lower level undergraduate courses, I am interested in applying my teaching philosophy to all levels of instruction. As someone who has benefited from research opportunities and an education in both math and physics, I am interested in any opportunity to teach interdisciplinary courses between math and the other sciences or to direct research projects. The past seven years have provided me with a great deal of experience, but I am excited for the opportunity to improve as a teacher of mathematics.