

TEACHING STATEMENT

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1. EXPERIENCE

My college teaching experience includes courses such as College Algebra, Precalculus, and Calculus (I, II, and III). I prefer to teach small classes, but I also have experience lecturing to several hundred students. On two occasions I have been presented with a teaching award from the University of Florida Mathematics Department. I am also a volunteer teacher at a correctional institution; twice per week I work closely with a small group of inmates who are preparing for the G.E.D. (high school equivalency) examination.

The most valuable experience I have had in teaching was my involvement with the AIM (Assisting students, Improving skills, Maximizing potential) program at the University of Florida. A limited number of first-year freshman are carefully chosen by the Office of Admissions to participate in this program, the goal of which is to facilitate a successful first year in college. A large number of these students are first-generation college attendees and/or come from economically disadvantaged backgrounds. Summer acclimation to college is one of the benefits of this program, and the students are required to enroll in the six-week summer B term and take six credits of English and math. I have taught three of these summer College Algebra courses, with great success.

These courses are intense. Class meetings are for two and a half hours a day, five days a week, for six weeks. With that much student-teacher contact, there is no limit to what can be accomplished. All of the students improved mathematically, with some having made great leaps. I learned that there is no reason for a student to not be successful, and that being a good teacher sometimes involves showing a student what he or she is capable of. This experience has stayed with me. In all of my teaching, it is personally important to me that my students succeed.

2. PHILOSOPHY

Here I list a few principles that I believe characterize my teaching, and are the core reasons why I am effective in the classroom.

Engage the students. You simply cannot teach well if your students are not “with you.” This is about more than just being enthusiastic, waving your hands, and shouting. What are you giving your students that they cannot get from their textbook? I often incorporate humor into my lectures. Frequently I describe colorful events or people in the history of mathematics that relate to the topic at hand. This can be enough to snap awake an early morning class. Here is another example, particularly effective if the class occurs just before lunch. At one time I came into possession of a number of coupons for a free Chik-Fil-A chicken sandwich. I would frequently offer a chicken sandwich for the correct solution of a problem, statement of a definition, etc. The students were always ready to earn the coupon, and it greatly increased the level of class participation. Years later I became aware of the existence of a Facebook group “for anyone who has been inspired

to mathematical heights previously unknown by the offer of a free chicken sandwich by Joshua Ducey.” Mathematics is not a spectator sport, to quote Paul Halmos. Whatever it takes, you have to get the students into the game.

Show the students the big picture. This begins on the first day of class, where I explain the goals of the course and the plan for achieving them. I tell the students exactly what is expected of them and what they need to do in order to be successful. I remind them of these things throughout the semester. In a mathematics course especially, it is important that the students not lose sight of the forest for the trees. Frequently I point out what we have accomplished thus far, what we are doing right now, and where we are going. When it is time to begin something new, I always start with a good motivational example.

Respect the students. I begin the semester by asking each student for a piece of paper telling me their name and something interesting about them. This helps me to learn their names quickly and shows right away that I am interested in them. I show respect to my students by being prepared each day, being clear in my explanations, and being available to them. Also, I grade carefully the work that they took the time to do. I try hard to notice each student’s effort and reward them for it. The students notice this, and if you work hard for them then they will want to work hard for you.

3. FUTURE GOALS

I am looking forward to having the opportunity to teach more advanced mathematics courses. Thus far my favorite course to teach is a small section of Calculus II. Right from the beginning I can intrigue the students. From their work in integration they will be able to derive many formulae of geometry that up until now they have been required to simply accept. From their work in series I will be able to present them with an exotic function that is everywhere continuous but nowhere differentiable; they will also see how the great Euler computed digits of π with phenomenal efficiency. With each more advanced mathematics course, there are deeper ideas and more beautiful gems that a student becomes ready for. I would like to be the one to show these things to them.

In particular I would love the opportunity to teach Linear Algebra, a branch of mathematics that I have grown to enjoy immensely. This is the kind of mathematics that can be applied starting with the earliest ideas; the material is highly accessible yet can be thought about in so many different ways. A transition course that introduces students to the notion of mathematical proof is on my list as well. I also think it would be a great deal of fun to teach a course with ideas intersecting my research area, for example Abstract Algebra.

Thank you for taking the time to read this. I hope I have conveyed to you some of my enthusiasm for being a teacher. I truly believe that I will do a very good job with any course to which I am assigned.