

# Teaching Statement

Brett Geiger (geiger12@math.uh.edu)

In every class I have taught throughout my career, multiple students have approached or emailed me stating that they have heard that this class is hard, mathematics makes them nervous, they are very weak mathematics students who feel they need to work hard to pass classes, or they have had bad mathematics teachers and instructors in the past. I believe each of these statements implicitly reveals one common theme: many students enter mathematics classes with an initial nervousness, uncertainty, or fear stemming from their own insecurities or past experiences. Students who feel this way motivate my teaching philosophy and desire to lead students.

Driven by my motivation to teach, when I address my class at the beginning of the semester, I focus on their expected nervousness and uncertainty. I first establish a comfortable and open learning environment by greeting them every single class, arriving to class early and staying after class to answer questions or simply informally chat with students, and encouraging students to question any concept that I present that seems confusing or unclear. I stress to my students that I view them as fellow colleagues by never assuming that I am smarter than them. Rather, I view them as people with unbounded potential that may not have the mathematical experience to maximize their potential. I express to them that I never expect perfection and that I will undoubtedly make a few mistakes as well. I always make myself available to them by having an open-door office policy where they can always come to me with questions when I am in my office. Because I establish this environment, students are now comfortable approaching me with questions and trust me in helping them become stronger students despite any insecurities they may possess. Furthermore, students are more apt to collaborate with each other to fulfill the goals I have set forth for them, which I have seen in all of the classes I have taught.

After I establish a comfortable and trusting environment for the students, learning can begin. My goals for my students in any course I teach are for them to develop sound problem-solving skills through collaboration and logical arguments, effective communication skills, and a solid work ethic which they can utilize in future classes and employment opportunities. I heavily stress learning by understanding, not memorization. When I teach any concept or solve any example problem, I always include logical explanations into why certain formulas, theorems, and principles hold as well as explaining why I am solving the problem a certain way. In the process of presenting these ideas and solutions, I pose questions to the students so that they are more active in developing these concepts. No problem is ever done with me simply listing out the steps without explanation and class participation. Stressing the reasoning behind these steps enables the students to rely on understanding and not memorization when attempting to understand concepts. When students ask me questions on a particular concept or assigned problem, we first establish where the confusion lies and investigate the methods they have attempted first. Using this information, I then lead them towards the solution by asking them questions along the way. In doing so, most students end up answering their own questions. To my delight, their answers sometimes reveal ways to think about problems that I had not previously thought. Therefore, I learn from them as well.

When I employ the above strategy, I believe that students leave my class embracing mathematics as an essential and evolving tool when entering the work force and that mathematical concepts are not magical statements cooked up by some ancient scientist. Rather, mathematical concepts are intuitive principles that every person has the ability to learn. In the numerous good reviews that I have received, students commonly felt that I cared about them, was patient when addressing their problems, and never made them feel like their questions were unwarranted. They commonly expressed that they felt comfortable approaching me and that I always was enthusiastic to help them. Mixed in with these statements, students stated that they learned a great deal in my classes, which I strongly feel is directly related to the comfortable environment I established. Their continued growth and success in my class inspires me to teach and lead the way that I do.