

# Dana C. Ernst

## Statement of Teaching Philosophy

In my opinion, the purpose of education is to train the mind to learn how to learn. According to Plato, "mathematics is the best training for the mind." Many people believe that mathematics solely exists to provide them with specific skills necessary for everyday life. I believe that mathematics does more than that.

When I teach mathematics, I teach from the perspective that the students are there to train their minds. If I can help students increase their ability to learn how to learn, then they will become better problem solvers and will pick up the skills necessary for everyday life along the way. I believe that the best way to train the mind is to make sure that students are being exposed to quality mathematics rather than a quantity of mathematics. By this, I mean that students are gaining an understanding for why a mathematical concept acts as it does, rather than just seeing it written on the chalkboard and memorizing a few rules. In my experience, students gain this understanding, not by just listening to me, but by being challenged. Students must be challenged in order to learn. One way that I challenge my students is by encouraging them to interact with me during class. My lectures are designed to be a dialogue between my students and I. Instead of handing them the next piece of the puzzle, I make them anticipate what comes next.

Students must also be willing to learn. Many students have a poor attitude towards mathematics. I believe that this inhibits their ability to learn. To combat the negative attitude of students, I teach with enthusiasm and show my students that I love mathematics. One of the first things that I tell my students at the beginning of each semester is that I believe that mathematics is beautiful. I always do my best to show them why I feel this way. I believe that a student will be more willing to learn mathematics if they have an appreciation for the subject. My positive attitude towards math has always seemed to improve theirs, and consequently improved their ability to learn.

One of the mantras that we hear often repeated in a math class is, "when are we going to use this stuff?" My response has always been that most of the time they won't use any of it directly. Of course this response shocks them. Most students are used to hearing things like: "you'll have to know this when you take Calc III" or "if you ever want to be a rocket scientist, then you'll need to know this." I do not believe that these are the appropriate reasons or the correct ones. At the beginning of each semester, I always provide my students with the following analogy. How many times do you see football players running through old car tires during a game? The answer is never. So, why do they do it in practice? The answer is because they are in training. They are training quickness and agility. The purpose of teaching mathematics is to train the mind to be quick and agile. Mathematics is two things to me: a beautiful subject to be appreciated and an excellent tool to train the mind.