Deepjyoti Ghosh : Teaching Statement

Mathematics is considered to be the mother of all sciences. It is really so because it is a brain-making subject and being thus, it makes me passionate about it and I consider this to be the driving force behind my enthusiasm for teaching the subject and improve constantly my methods of teaching. I firmly believe that in order to understand math, you need to do math. As a graduate student, I am honored to have been an instructor of record, a lead teaching assistant for Calculus, and a grader for high-level undergraduate courses.

I care deeply about the intellectual development and personal growth of my students. I have noticed that in general, students fear mathematics and thus fail to see their potential to excel in the subject. In my opinion this fear deprives them from the nourishment this subject has to offer.

As both instructor and teaching assistant, I have noticed that students are quick to grasp new concepts when I explain them, but struggle with the basic concepts and computations. Consequently, I focus on teaching foundational material in a clear, intuitive way. Moreover, sometimes I purposely make mistakes to ensure students are attentive and following the subtleties of the topic. This focus on foundations develops both analytical skills and computational proficiency. My students often say that the use of my techniques leads to consistent excellence.

Each time I teach a calculus lab, my focus is on problem solving. I believe labs are designed for the purpose of problem solving. In general, the lecture section does not have enough time to cover a variety of problems along with teaching the concepts. My goal in labs is to first answer students’ questions, which they encounter while solving homework and quizzes. I then move to different problems I consider tricky and important in order to clarify relevant concepts. For instance, I teach students how to take a given series and systematically apply tests for convergence. I focus heavily on written communication as well. Students must learn to coherently communicate technical thinking.

As an instructor for Introduction to Mathematical Reasoning, the challenge I had to face was to teach non-mathematics students rudimentary math concepts. It was challenging for me to come up with ways to explain easy math in a lucid way, as for mathematicians these are just alphabets. I focused on foundations first as I prepared the students for the exams. To ensure this, I cover a diverse range of problems on each topic, no matter how trivial the problem might be. Most of my students had been detached from math for a long time, so I tried to engage them through my passion for the subject, prioritizing grasp of the fundamentals to ensure success on tests. My students report that I successfully educated and inspired them.

I try to bring the innate beauty of mathematics to my classes by solving various problems, showing students how to overcome challenges, demonstrating the use of mathematics in daily life, and referencing comments from television series such as The Big Bang Theory or movies. Through my teaching I try to ensure that students fall in love with mathematics. I want my students to experience inspiration, not feel like human calculators! I always wanted to be in academia, and through this process I hope to enhance my teaching abilities and motivate my students to disseminate their knowledge to future generations.