Teaching Statement

Srimathy Srinivasan

When someone asks about my teaching philosophy, the first thing that comes to my mind is the quote I read from a book: “You can teach a student a lesson for a day; But if you can teach him to learn by curiosity he will continue the learning process as long as he lives”. This quote had a huge impact on the way I taught mathematics for the past six years. As a teacher, I have always felt that the greatest challenge is not to teach the students how to answer questions, but to teach them how to ask the right ones. Because while there are text books and study guides which teach them how to solve problems, invoking curiosity of a student to ask new interesting questions as an integral component of learning is a very challenging task for a teacher. I try to invoke this curiosity by training them to understand a topic by having an intuition for it. An easy way to give intuition to the students is via examples. Let me explain this philosophy in detail. Suppose I want to prove a theorem from the text. Before giving the statement of the theorem, I start with an example that essentially incarnates the data that theorem presents. If possible, I continue to give a couple of more examples along similar lines. Once they get a hold on what is going on, I ask a few questions about some common phenomenon that these examples illustrate. That way the students not only understand the underlying concepts hidden in these examples but also learn how to make observations from examples and to ask if a given phenomenon observed from these examples holds in general. Finally once the students get an insight of what is going on, I state the general theorem I wanted to prove and give an outline of the proof again by taking support of the examples before writing down the actual rigorous proof. That way I have realized that the students are more motivated to understand the theory rather that just memorizing the statement of the theorem and formulas. A right balance of theory and example is the key to provoke their interests and to keep them focused.

A common scenario that I face in all the classes I have taught is the diversity of students’ backgrounds. The classes usually consist of only a small percentage of math majors with the rest from various other majors who do not necessarily have a sound mathematical background. These students usually experience anxiety and sometimes are withdrawn from the rest of the class. One usually needs to put some extra thought and come up with a strategy for the latter type to catch up. Sometimes the solution could be as simple as making them work in groups where each group consists of students with different mathematical backgrounds. Other times one can help the weaker students to be on board by starting the class with a warm-up session where I briefly recall the topics that were taught previously, highlighting the important points and encouraging them to ask questions on topics they have doubts even when they are very basic. When answering their questions I make sure that I rephrase the theorem or the facts in simpler language with diagrams or examples instead of reciting the the facts word by word as stated in the text book. Whenever relevant I also come up with short cuts and tricks to remember formulas. I try to employ every possible method to override the general consensus that math is hard.

While one aspect of teaching is to make sure that even the weak students are on board with the rest of the class, we should not forget that the process of learning does not just involve listening to the teacher or discussing with peers. Learning is not complete without doing. So about halfway through the class, I give them a few simple problems and let them solve on their own using their
own understanding of the subject. Many times it happens that they are unable to solve a few problems. In those circumstances, instead of directly giving them solutions, I try to give a kick start by showing the very first step and then giving them a series of hints that will lead their way towards the answer. That way they not only learn how to solve problems on their own but also get to experience the joy of discovering something on their own. I also give them extra credit for some tricky problems that require out-of-box thinking. This not only keeps the brighter students engaged in the class but also lets all the students to grow intellectually and lets them feel what problem solving really is. Once they get to this point they usually catch on and do the rest of the exercises themselves.

All through my journey as a graduate student, I have enjoyed teaching and tutoring a variety of courses like calculus and linear algebra at various levels for students from diverse backgrounds. It has been a great opportunity for me to share my knowledge and gain even more through teaching. In this process I have had the greatest privilege to work with students and reveal the beauty of mathematics and the thrill of problem solving. I am really looking forward to continuing this journey in the future.

Comments from Teaching Questionnaires

“Srimathy was an excellent teacher. I really learned alot from her and loved her teaching style. She inspired me to further my education in math. Coming in the class I wasn’t sure if I wanted to be a math major or not but after taking her I am a dedicated math major. She explains things clearly and in a way that you can understand. She always answers all my questions (I had plenty) and always did her best to help me. Looking forward to taking this instruction again”

“It was nice that there were no MATLAB assignments. Ms. Srinivasan is a very good lecturer. Whenever someone had a question, she was able to explain the solution clearly and quickly.”

“I thought this class was taught in a very logical, clear, and concise way and I felt I fully internalized most of the concepts. My only suggestion would be post solutions to the problem sets. While we went over select questions in class, it would have helped me to sit down and compare my answers to the solutions.”

“She takes her time with students! Good TA!”

“Almost everything I learned from this course, I learned from Srimathy. She was much more effective at teaching the course than the professor. Very clear and concise.”

“I really like Srimathy I thought she was incredibly smart and kind. The TA knew the material very well, and made it easy to be comprehended during discussions.”

“Srimathy helped me alot. One of the better Math TA’s I have had.”

“Great TA. Very warm and knowledgeable.”

“The TA was good with explaining and answering questions asked by the students. I liked that she took problems that people did not understand to work through.”

“TA was very nice, pretty easy to understand despite accent, and really knew her stuff. Approve :)”
“Very good at showing us problems that would be most helpful/relevant to quizzes and tests. Easy to understand and communicate with!”

“A kind TA who knows her stuff.”

“She really tried to help us understand the material any way she could and clarified a lot for me. Her quizzes were probably easiest among all the sections and if you argue that something was graded incorrectly she’s happy to give you the points back as long as you are right.”

“Srinivasan was a good TA. The discussions were formatted for a time for questions from the homework then additional example problems were worked through. Quizzes every Thursday were brief and a perfect level of difficulty for the first time being tested on the material.”

“Srimathy was a great TA. She was approachable and very helpful overall. She explained all the homework and answered any questions very thoroughly, explaining each step.”

“At first, I thought that Ms. Srinivasan was a mediocre TA, but by the end of the year I realized that she taught us little things that made a significant difference in our grades, and was a very likeable person overall.”