

TEACHING STATEMENT

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Teaching is a wonderful opportunity to learn and develop myself, and it has always given me great enjoyment and satisfaction. I believe in encouraging students to become independent, creative and to think of ways to solve problems which are different from the ones we adopt in class. Also, it is necessary to develop innovative and unique ways to explain the concepts as students have varying learning abilities and capacities, which makes it an extremely exciting challenge.

Summary of Teaching Experience: My teaching experience so far involves the opportunity to teach portions of undergraduate courses such as Probability and PreCalculus as well as being a TA, grader and tutor for a wide range of courses such as Calculus, Abstract Algebra, Discrete Mathematics and Introduction to Complex Analysis. As a TA, I have handled Calculus labs with an average class size of 50-60 students every semester. My performances as a TA during the first two semesters helped me in getting promoted to the post of **Lead TA** in Fall 2018, a position which I continue to hold during the current academic year as well, for the fourth consecutive year. As the Lead TA, I coordinate with a team of 15 or more TAs every semester, who handle all the labs and grading related to Calculus 1 and also serve as a liaison between this team and the team of instructors of Calculus 1. In addition to this, I have also had the opportunity of being an **Instructional TA** by invitation for the Summer Scholars Academy at UH during Summer 2019 and 2020. In this program, which is a 9-week summer program designed for students with outstanding high school academic record, I was responsible for assisting with teaching the Calculus 1 part of the course. I was awarded the **M. Friedberg Fellowship** by the Department of Mathematics, UH for Spring 2020 for achievements in research and teaching. I was also nominated for the same award again in Spring 2021. In addition to that, I have been unanimously nominated twice by the department awards committee for the **UH Graduate Teaching Assistant Award**, in 2021 and 2020. This is in recognition for excellence in teaching and hence, I have been selected to represent the department for this university level award. Please refer to my CV for a more detailed description of my teaching experience till now.

Teaching Philosophy and Methodology: To begin with, it is imperative to build an **interactive and active class environment**. The students should be able to think creatively, feel comfortable in asking questions and feel assured that an honest attempt will be made to *discuss* the solutions to every problem. I believe that the lectures and labs (supplementary sessions to lectures taught by TAs) should not only be a place to give out information, but a place to give students the tools they need to solve problems by themselves. A **collaborative class environment** facilitates the development of their analytic techniques and critical thinking.

All students have varied takeaways from any course that they enroll in. It is important that the way concepts are taught, and problems are solved in the class, caters to this variety that exists in interests and goals. Some students only take a course because it is a prerequisite for some other course that they are interested in or is mandatory towards the completion of their degree, whereas others are really invested in learning all the concepts. I always make an attempt to explain the theoretical elements of the course using real life analogues, to help students visualize those concepts and develop an intuitive understanding. This, in my opinion, helps them remember and understand the concepts better than they would if they just heard me state everything. Plenty of courses/subjects in undergraduate mathematics programs like Calculus are not stand-alone, but comprise of a series of courses one needs to take. In such a scenario, it is even more important that the students complete each course with a good

understanding of all the concepts and develop problem solving skills to tackle a variety of problems. This should result in a smooth transition into the next course that they take.

Since labs are a supplement to the main lectures, my goal is to facilitate a thorough review of concepts taught in the lectures to build a strong foundation. This is followed by a discussion on questions related to those concepts, starting with simple ones and then building up to more complex ones. This involves diligently planning every lab to use the time effectively and an aim to help the students see how the central topics can be applied in various scenarios.

Wherever possible, I try to give them **multiple approaches** towards solving a problem. This gives the students a chance to choose one method that they feel comfortable with. I also design multiple versions of different problems which are similar to the ones appearing on their assignments and tests, and we practice these during the lab sessions. Practicing problems allows them to get a feedback on their level of understanding of the concepts. The aim is to enable them to internalize the knowledge instead of having to memorize facts. My students are always encouraged to solve problems from different sources like assignments, textbook exercises and other resources available on the internet.

Though there are regular assessments for the students in these courses by way of weekly online quizzes, assignments and tests, it is as important for me to get feedback on how effective each lab session has been. One way I do this is by leaving gaps in solutions of questions and guiding the students to fill in the missing steps. This keeps them engaged and helps me gauge their level of understanding.

The duties of a teacher continue outside of the classroom as well. I hold regular office hours where students can meet me in a less formal setting to discuss questions and concepts.

Teaching in the times of a global pandemic: In the situation that we are in, where there have been lockdowns and exclusively **online classes** for the past 18 months due to the COVID-19 pandemic, it has been my endeavour to help the students feel comfortable by making sure that enough time was spent in mastering the use of virtual teaching platforms such as Microsoft Teams. Prior to the Fall 2021 semester, when we only had online teaching from Spring 2020 till Summer 2021, all my classes were recorded and a PDF file with notes from every class was posted for the students to readily access at a later stage. I have also actively helped train fellow TAs in our department in the use of MS Teams. Currently, during the Fall 2021 semester, when face-to-face teaching has resumed, there are still some students who do not feel comfortable to come to campus. To accommodate such students, I have also made myself familiar with a **hybrid mode of teaching** where everything that is done in class is also streamed and made available online for those students.

In the current online/hybrid mode of teaching, I have maintained an additional channel in the class teams on MS Teams as a discussion board where the students can ask questions between classes and I monitor this channel on a daily basis.

There is always a desire in me to look for opportunities to teach or even grade for a course that is different from the ones I have done before as that presents me with an opportunity to re-learn some concepts that I studied during my undergraduate years. Every semester is like another opportunity to grow and to keep reinventing myself as a teacher.

"In learning you will teach; in teaching you will learn"
- Latin proverb