TEACHING STATEMENT

ADAM LOTT

1. Introduction
Throughout my time at UCLA, I have served as a Teaching Assistant for a wide variety of courses spanning most of the undergraduate math curriculum. I have extensive experience with core lower-level courses like calculus and linear algebra, but I specialize in and am most passionate about probability, statistics, and financial and actuarial math. Through this broad experience, I have developed some key methods and philosophies that have greatly improved my effectiveness as an educator. The success of my approach has been recognized, as I was awarded the 2022 Liggett Fellow Award for outstanding performance as a TA.

2. Teaching Philosophy

Providing meaningful context. The purpose of a math course is not to just prove arbitrary collections of theorems, but rather to develop the tools to answer other naturally-occurring questions in a mathematically precise way. At the beginning of a course, I try to give an overview of what kinds of questions this course is designed to answer, and use that as the motivation for introducing new concepts. For example, at the beginning of a statistics class, I will pose a question like the following. “Suppose you flip a coin 10 times, and get heads 7 times. Would you conclude that the coin is biased? Would your answer change if you flipped a coin 1,000,000 times and got heads 700,000 times?” The students all have enough natural intuition about randomness to answer “no” to the first question and “yes” to the second question. I then explain that one of the goals of statistics is to approach questions like this in a more quantitative, precise way. Having examples like this in mind makes it easy to understand why we would want to study things like confidence intervals, hypothesis tests, Bayesian inference, etc.

Emphasizing problem solving. It is much easier to understand someone else’s solution to a problem than to come up with your own solution. Therefore, when I teach, I dedicate a significant amount of time to talking about problem-solving strategies. Understanding the material conceptually is important, but just knowing lists of definitions and theorems is not very useful without understanding how to use them to solve problems. Practically, time constraints make it impossible to let students work everything out completely on their own, but I use some techniques to mimic this as much as possible. For one, I stop frequently to ask for input from the class. If I am in the process of proving a theorem or solving a problem, I will stop periodically and ask the class to provide the next step of the proof/solution. This gets the students thinking proactively about how to solve problems, not just trying to reactively understand my process. Also, I will occasionally present the solution to a problem exactly as I solved it myself, including all of the unsuccessful approaches I tried before finding the correct one. By doing this, I hope to give students some strategies for how to proceed when they get stuck, as well as convey to them that it’s normal for solving math problems to be a messy process.

3. Selected student evaluations

• “Adam was an excellent TA. He was always willing to help and answer questions. His lecture presentations were well planned and organized.” (Spring 2022, Statistics)
• “The TA was knowledgeable and allowed students to practice proof skills by completing homework problems in discussion.” (Spring 2021, Linear Algebra)
• “Adam is very clear and helpful during discussion. He often picks a few difficult questions from the textbook and explains them in detail to better illustrate the concepts via applications. I love the way he converts complex Markov chains into human understandable English.” (Winter 2020, Actuarial Math)
• “Adam is a wonderful TA. He is very knowledgeable and passionate about analysis. He explains the complex concept very well by show us how to do it by informal way first to make sure everyone is understanding what he is going to do. Then he redo it by formal way. He is extremely effective in his office hours.” (Fall 2019, Real Analysis)