Teaching Statement
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Teaching has always been a pleasure for me. It is invariably very fulfilling and it is one of the main factors in my decision to pursue an academic career. I am looking forward to the opportunity to teach students, and plan to make this pursuit an important element of my future career. I have been very fortunate to have had many opportunities to teach and interact with students, both in academic and extra-curricular activities. From being a teaching assistant at the University of Lisbon and at Carnegie Mellon University to teaching outdoor skills, teaching has always been very exciting and rewarding.

Mathematics instructors often find themselves teaching extremely heterogeneous groups of students, whose interests do not include the course material. This was the situation I faced many times as a teaching assistant, both at the University of Lisbon when teaching Theory of Calculus for Physics majors, and at Carnegie Mellon University when teaching Calculus of Approximation for an engineering class or Calculus for Humanities. From teaching these classes, I learned that students are more open to studying a subject once they understand why they should be studying it. I try to introduce new notions by giving some real-life examples where those notions enter naturally. Only then do I go into more details about the material. A group of mathematically heterogeneous students can understand general concepts at a much more uniform pace than the pace at which they can go through mathematical derivations.

My method of teaching in classes for students majoring in Mathematics is quite different. The students in these classes are advanced undergraduate students who will likely be doing research, which will require that they are able to understand and prove theorems. Motivating the students for the material still plays a big part, but teaching how to rigorously prove a result becomes equally important.

For example, when teaching the concept of derivative in a Mathematics class, before giving the definition, I usually sketch a graph of a function and show how the line connecting two points on the graph approximates the slope of the function when the points get closer and closer. For a more heterogeneous group of students, I might give the example of a car traveling on a road, and explain that the derivative of the road at each point is the direction at which the lights of the car are pointing, and only then proceed to the graph, which gives the underlying idea of the rigorous definition.

Solving problems is one of the most important goals in Mathematics, and one thing every teacher learns is that different students understand problems differently. My perspective can be very different from the students' perspective, and that is why I always try to explain a problem in multiple ways. An elegant and streamlined proof that convinces a senior analysis student will bewilder a freshman, whereas a less rigorous argument based on an example might satisfy the freshman, but not the senior. Another goal I strive for in my classes is a cooperative learning atmosphere, which I stimulate from the beginning of the semester, by proposing a controversial problem like the Monty Hall or the Three Cards problem. Even though the problems might not be directly related to the course, it always engages students in mathematical discussion, especially after we come to an understanding of the correct solution. This usually sets the tone for an open environment during recitations where students feel more relaxed about voicing their questions and comments about the material.

As a teaching assistant, I have consistently received favorable evaluations and comments from my students, including "*definitely knows how to work through problems in a way that makes it easy for students to learn*", "*strongest point: examples! Lots of examples were really helpful*", "*His additional ideas and extra information that he gives us are extremely useful*", "*he genuinely wants us all to do well. He's very amiable and open to students' suggestions*", and "*I thank you so much for your support, and thanks for all the encouragement*".

Having been a teaching assistant during most of my graduate studies, I feel not only qualified, but also eager, to teach a broad array of subjects, such as introductory undergraduate courses in any area, from Linear Algebra to Basic Logic, or any course in Analysis, from Calculus to Partial Differential Equations.

Throughout my life, I found it to be extremely rewarding to be able to explain a seemingly complex problem on an intuitive level, be it explaining a concept from Linear Algebra to a small group of peer high school students, or giving a seminar on Gamma Convergence to a full room. I consider it to be a challenge to transform material that is difficult to understand into captivating, understandable and highly informative recitations, lectures, or talks.