TEACHING STATEMENT

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Over the last five years, I had the privilege to work as a Teaching Assistant for a wide variety of classes here at MIT, ranging from introductory calculus and linear algebra to first year graduate analysis. I worked hard for these classes, and I believe that, with each of these opportunities, I have considerably developed my ability to communicate with the students, hence creating a productive and enjoyable work environment. Together with research, teaching and mentoring students have become an integral part of my routine.

My own university education was divided between two systems: my introductory courses in Croatia stressed formality and rigor, whereas the classes that I took at Berkeley and at MIT emphasized building intuition and concepts over formal definitions. I believe that I benefited from being exposed to these two teaching styles, and that they have both influenced my own style, in which I try to balance these two ideals.

In my opinion, the greatest lesson that a teacher can teach their students is excitement for the material. Both in Croatia, and in the United States, the professors whose teaching I admired the most were those who “drew the students in” by exhibiting their excitement for the subject. I would be sad when such a teacher would leave for a week to go to a conference, and I would look forward to every next class which they would teach. I am excited about mathematics, and my experience has shown that transmitting this excitement to students is fundamental in my role as an educator.

It is important to keep in mind that students spend a small portion of their “learning time” in class, and that most of the material they learn comes from self-study, recitation, and office hours. It is my job as a teacher to make students’ lives easier by making the latter two environments productive, but also friendly, as I believe that it is impossible to produce good work in an antagonistic atmosphere. I make it a point to invite questions, and to honor them with patient answers which pick students up where they left off. Ideally, my answer will make students feel that asking their question already put them in close reach of the solution, and that my role is only to “save them a little bit of time” by discreetly directing them to the right idea. This is crucial in helping the students build self-confidence and motivating them to generate ideas of their own. I feel great when I reach this level of trust and understanding with my students, and I work very hard to get there.

In many introductory classes the students are asked to absorb and master many new definitions and concepts very quickly. I understand that this may be quite overwhelming, and that the initial reaction of some is to avoid asking basic questions, often for fear of embarrassment. I have tried to use several techniques to help the students resolve this problem, and I have applied them in my recitations. One such technique, which was suggested by one of my senior colleagues, is the use of a “memory board”. On a designated board, I will quickly review important and relevant concepts from previous lectures. I will leave this board up during the whole recitation. If students use the memory board to ask questions related to previously covered material, this is a good indication that the recitation is going too fast, and that I have to backtrack. In addition to this, the presence of precise statements helps us avoid vague communication.

My students have described my lectures as being very organized and well-prepared:

I really would not have done as well in 18.02 [Multivariable Calculus] if I hadn’t had such a strong recitation instructor. He obviously has a really good understanding
of the material, but he also shows exercises and solutions to exercises in a well-
orGANized, easily followed way.

I consider thorough preparation of each lecture absolutely essential. It is the first gesture I can
make towards my students to show that I sincerely care about what they are learning in each class.

My first advanced TA assignment was that of for the Second Course in Analysis. This class had
no recitation section, and my duties were grade to help the students with the homework. The class
was almost graduate level and it was a great responsibility to make sure that the students didn’t
get lost. Every other week, my office hours were packed with over ten people in my small office. We
would have discussions about the problems which would often last for several hours. In this class,
I felt that I had the chance to develop a close relationship of mutual respect with the students.
In fact, one student, with whom I developed a close friendship over the years, invited me to her
wedding.

This semester, I am working as a TA for the first year graduate analysis class. It is a great
experience to be a TA for the same class that I had to take in my first year. I feel that it gives
me a greater deal of insight into the class, and helps me judge what level one can expect from
the students. As a part of the assignment, I was supposed to give a presentation on an advanced
topic related to the syllabus. In discussion with the instructor, Michael Eichmair, we decided that
I would present on the Concentration Compactness Method of Pierre-Louis Lions. In addition to
complementing the class material, I hope that the lecture notes that I prepared will be a useful
reference to the students who will study Nonlinear Dispersive Equations, since it is difficult to find
a good reference for this important method.