

## TEACHING STATEMENT

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I consider that a teacher has an impact not only on the students' future professional life, but also on their professional personality. This brings a lot of responsibility and makes teaching a challenge.

**Experience :** My teaching experience started as an undergraduate student at University of Bucharest, where I took courses in Psychology and Pedagogy. As part of my mandatory training, Teaching Practicum, I taught high school students mathematics for a few weeks. Then, as a graduate student at Stony Brook University, I have had experience as teaching assistant, lecturer and course coordinator. I taught mostly Calculus A and B, but also more challenging courses, such as Problem Solving and Games - MAT 160, Multivariable Calculus with Applications - MAT 203 and Introduction to Analysis - MAT 320. As a postdoc at University of Southern Denmark, I taught Introduction to Multivariable Calculus. Finally, as a visiting assistant professor at University of Michigan at Ann Arbor I was in charge with Calculus B-Honor Calculus. My responsibilities included making the syllabus, a web-page for the course, midterms and final exams and assigning grades.

**Transfer of Knowledge :** The first thing a teacher should focus on is the *preparation for the class*. I prepare my classes in great detail, with many examples in hand. As often as possible, the topics are introduced through their application in life or in other subjects. Before the exams, I organize review sessions in which all the necessary concepts learned in the last few weeks are reviewed, or I just discuss their questions.

The learning process should start before lectures. To increase the effectiveness of the time spent in class, I suggest to my students that they read ahead and familiarize themselves with the material to be covered the following week. To encourage them to complete the *reading assignments*, I ask basic questions from that material, in the form of an at-home quiz due at the beginning of the week. By going over their answers, I know what my lectures should focus on and what should only be briefly addressed, and what common mistakes I have to correct.

**Interactive Learning :** Interacting with students, allowing them to comment on the problems solved in class helps them get a better understanding of the concepts discussed. I try to *develop logical and analytical skills* that my students can use in their future: ability to identify and extract relevant information, to construct simplified models for complex situations, to understand and sustain a logical argument. This works particularly well in the Math Learning Center, where I help individual students or small groups. Instead of explaining an exercise, I use it to demonstrate the technique at hand. I have met students who thanked me for passing an exam. Then I know that I did not just solve a homework problem, but instead I taught them how to develop a more organized learning style.

The students should not only to ask questions, but also to try answering their own questions. In this way, they become more confident. More important, they learn that understanding is not enough. You need to be able to express your ideas clearly and with complete arguments. Usually, I encourage the students to come to the board and do exercises by themselves. What I want from them is not only do the exercises correctly, which is the ultimate goal, but to be able to find their own mistakes and to correct themselves. If they cannot find the mistakes, I let the class first finding them before I give them hints. During the years I taught, I noticed that this practice gradually improved the performance of my students.

On the other hand, various tips can be picked up from students about how to explain things usually taken for granted. Allowing a relaxed atmosphere in class helps me *get everybody involved*. Addressing them on the first name basis also helps. More than once I felt rewarded when, a usually shy student offers to come to the board and solve the problem in front of the whole class.

During the semester, I let my students know about their performance, about their mistakes in homework and exams, helping them not repeat these mistakes. I encourage my students to seek assistance as early as

possible. I follow their progress closely and, when I am worried about a particular student, I talk to her/him privately, trying to understand the source of the unsatisfactory performance and to identify what can be done to help her/him improve. I regularly ask my students for feedback about my teaching. After receiving this information, both from one-on-one discussions and from unsigned questionnaires, I adjust my teaching according to their answers. I also seek feedback from former students.

**Teaching techniques :** Perhaps my best quality as a teacher is the ability to tune myself to the correct frequency and discover the essential idea I need to convey. That way I can adjust my exposition and pose suitable questions that promote the assimilation of concepts. *Keeping eye contact* is a way to determine when the students follow an explanation, and when one should pause and provide additional meaning. Similarly, when I make a side remark or stress an important idea, my intention is twofold: not only do I add substance to a concept, but I can also establish how well is the concept being absorbed.

Rather than relying on fixed guidelines, I prefer to keep an eye open for hints that tell me what is missing in my exposition. I took a big step in my teaching method when I started to treat the material in class from the student point of view; that is, searching for links with more familiar concepts.

Learning is not a linear process, so in class I repeat myself, then try to pose questions that students may be shy to ask: what is the core concept? what was the relevant trick here? Then I repeat again.

I use the blackboard in a similar manner. I write statements and questions to be answered, then put boxes on important results and formulas. I know all of this will be copied in notebooks, so I try to induce notes that will guide the students later.

I support a responsible use of technology in teaching mathematics. I think it is beneficial to use calculators for complicated or lengthy computations, for graphing, etc. For these purposes, I also encourage the use of computers. But, I strongly discourage the use of calculators for every simple operation.

**Other Experiences :** Beyond my usual teaching duties, I have participated in different activities involving learning experiences.

- My first experience as a course coordinator was in 1999, when I taught MAT 160, a course intended for students who are interested in sharpening their problem solving skills, and in developing their mathematical intuition and ability to express mathematical ideas. A few years later, in 2002, again as a course coordinator of MAT 320 (Introduction to Analysis), I had as students some of my former MAT 160 students. At the end of the semester, many students asked me for letters of recommendation or for help submitting their writing requirement for graduation.
- In Spring 1999, teaching MAT 125, I was part of the Learning Community Program. The goal of this program was to help freshmen students adjust to college life. The participating undergraduates were organized in smaller sections, taking their different courses together. As one of the lecturers, I had biweekly meetings with faculty, and fellow lecturers and teaching assistants from the Chemistry Department in which we tried to relate MAT 125, the course I was teaching, and the chemistry course CHEM 131. We developed a booklet containing a number of exercises with similar solutions, in both mathematics and chemistry. We wanted to show to our students that chemistry and mathematics are not two totally unrelated disciplines, but two very interconnected ones. The results were very encouraging, and the program is still ongoing at Stony Brook University. I believe it could be successfully implemented at other universities, too.

For my work, as a part of this program, I was rewarded with a Teaching Fellowship of the Learning Communities Program.

- In Spring 2000, I participated as one of the lecturers at the Problem Seminar, algebra section. This is a program commonly ran by graduates to help their fellow students prepare for the comprehensive examinations.

I am fully devoted to a successful academic career, and I hope that, someday, a student will tell me that I made a major positive impact on her/his life.