For me teaching is not just a job that I have to do, but a calling. I approach it with special care and passion. Over the years my teachers have played a significant role in my life and helped me develop not only as a mathematician, but also as a person. Teaching is my way to give back the attention and effort I have received to future generations.

My teaching approach has been refined over the years, and today it combines two aspects. The first is my pedagogical knowledge gained as a student in an Eastern European educational system, where the theory and practice are separated in lectures and discussion sections. The second is my experience in American universities, where theory and practice are inseparable and the active and interactive learning are an integral part of the education process. I think that interactive learning helps students to develop critical thinking and passion for science. That is why I integrate collaborative learning methods within the traditional lecture format in both lecture and discussion sections.

In my classroom I try to create a comfortable and supportive learning environment. I express a positive and respectful attitude towards students by approaching each one and their learning individually. In small classes, I try to get to know each student and learn about their background and the motivation they had for taking the class. I strongly believe that each student can progress in their learning if one has the correct approach towards them. I arrive early to class and stay longer after the end of lectures and sections to address questions, discuss related materials and share my passion for mathematics. During the years I have received multiple “thank you” messages and cards from students who appreciate my teaching approach, as well as a lot of positive comments in the end term teaching evaluations, such as

“Katerina's love of math and teaching is infectious. You can tell she loves the subject and showing students the intricacies behind the ideas.”

“Every single thing I learned in this class was because of Katerina. She was SO effective in her teaching style, patient enough to go through everything we didn't understand (which was basically everything) and so devoted to us. Clearly her time is valuable but I felt like she was willing to drop everything for her students. If it wasn't for Katerina I would have 100% failed this class. Thank you!!”

I treat with special care the structure of my lectures and discussion sections. It is my duty and responsibility to ensure that during my class the material is presented in a comprehensible and effective way. I pay attention to the structure and the content presented during class. I start the discussion sections with a brief review of the theoretical concepts covered in lecture and explain how the new theory falls into the “big picture” of the course. After that I cover problems that would help the students to consolidate their knowledge. Students first work alone on the posted problems, then work in groups, and only after they have spent some time on the problems, I present the solutions on the board. I follow the same philosophy in the design of my lectures. During lectures, I do my best to cover the material in the most engaging way for the students by motivating the theory with interesting and exciting examples. I start with an outline of the topics to be covered, explain how the new topics fit in the structure of the course in general and then present the new material in an interactive environment, by moving between theory and practice. I carefully plan each class by preparing slides and handouts that emphasize the main ideas. I do my best to provide a coherent and systematic arrangement of the topics.

In terms of content, I pay extra attention to adapting the material for the course to the composition of the class and make sure that everyone in the classroom benefits from the lecture. In the majority of undergraduate classes students come from different departments and have different backgrounds, making each student in the class engaged a challenging task. I do my best to ensure that in the problem sheets for discussion sections there are easy examples, covering main new topics, as well as more advanced problems for those who are already
comfortable with the basics. When I design homework, I try to give problems that will not only test their understanding of the material, but will also give them an opportunity to learn, explore and be challenged. During lectures and discussion sections I try to facilitate examples that are interesting for the students in my classroom, emphasizing the real-world applications of the topics. I have received a lot of positive comments in my teaching evaluations such as

“I learned the entire class in the section. Lectures were very fast paced and not well explained, but section handouts and problems were directly related to the homework and exams and I found them to be much more helpful than lectures. Also, Katerina was so good at explaining new/unfamiliar concepts with patience and concrete examples to help us understand better!”

“Katerina basically taught me this course, she was amazing at explaining things and really helping me understand. She teaches with a great balance of explaining the topics but not making them too complicated.”

“Katerina created detailed section handouts for each section, which were an invaluable help to students and far above and beyond normal TA effort, placing her among the very best TAs at Stanford”

In the last eight years I have been teaching at Stanford, MIT and in a variety of summer camps for high-school students. I have been working as teaching assistant, course assistant, course instructor, lecturer and project advisor. (A complete list of my teaching jobs can be found in my CV.) But despite my experience, I think that teaching style can always be developed further and improved. I approach each class that I teach as a new teaching/learning experience for me and I do my best to improve my teaching practices. I look forward to having the opportunity of teaching new classes of all levels and sharing my passion.