

- **Teaching statement**

There are two aspects that stand out in my teaching style. One of them is organization. The day before teaching, I usually spend 1-2 hours preparing my lecture, laying out exactly what I want to say and how I want to say it, including the fully worked-out problems. This may be due to my upbringing in the French school system, which emphasizes preparation, organization, and rigor. As a student, I never appreciated it when my teacher hand-waved or got stuck on things because of poor preparation, and my goal is not to do the same to my students. As a result, my lectures run more smoothly: they are organized in topics/bullet points, which I announce at the beginning of class, so that the students know exactly what I'm going to cover on that day.

The other aspect is enthusiasm. For me, teaching is like being an actor on a stage. I am passionate about math, and my goal is to deliver that passion as enthusiastically as possible. That is why I try to present every lecture with as much energy as I can. My experience of taking 7 years of drama in middle and high school helped me tremendously with this. In addition, I also like to use visual cues like using colored chalk and boxing important theorems, in order to make each lecture as appealing as possible. Finally, to help with the enthusiasm, I tend to use fun analogies for students to absorb the concepts taught, like using the videogame Bomberman to calculate determinants, or using walnuts to illustrate the chain rule.

In my lectures, I tend to give an example-based approach. Whenever I introduce a new concept, I like to start with a concrete problem first. For example, when solving systems of differential equations, instead of introducing the theory in full generality, I first focus on a specific example, e.g. "let's try to solve the system  $x' = 3x + y$  and  $y' = x + 3y$ ," and use that example to guide the students throughout the discussion of the theory. Furthermore, for sake of clarity and effective teaching, when I cover a more theoretical aspect of a course, I tend to keep things simple by sticking to cases that are specific enough to get a picture of what's going on, but general enough so that the students can easily extrapolate the general case from that specific case. For example, when discussing higher-order differential equations, I usually stick 3<sup>rd</sup> or 4<sup>th</sup> order equations (instead of general  $n^{\text{th}}$  order equations).

One teaching achievement I am particularly proud of is the result of a risk I have taken during summer 2012, when I taught "Linear Algebra and Differential Equations." The way this 8-week long course is usually taught is to teach all of linear algebra during the first 5 weeks, and then differential equations during the last 3 weeks. The problem I have encountered with this classical approach is that students would forget the linear algebra-part by the time they are in the middle of the differential equations-part, which is problematic because (1) the latter depends heavily on the former and (2) this approach doesn't illustrate the beautiful connection that those two fields share. So what I did that summer was to mix up the topics, covering a linear algebra topic (say orthogonality) followed by the corresponding differential equations-topic (Fourier series and partial differential equations). The students really appreciated this because it allowed them to absorb the material in a more effective way and get a clearer picture of the course whereas for me, it allowed me to cover a dense amount of material in only 8 weeks. As a result of this achievement,

the Graduate Student Instructor Teaching and Achievement Center awarded me with the Teaching Effectiveness Award in 2013.

Finally, I really care about my students. Whenever I get an e-mail, I try to respond as quickly as I can (fortunately smart-phone technology made this process as simple as possible). I also provide the students with numerous office hours, as well as hints to homework problems, study guides and practice exams and review sessions before each midterm and final. You may want to look at my website <http://math.berkeley.edu/~peyam> for examples, especially the one for Math 54.

In return, my students really appreciate my teaching, which are reflected in excellent teaching scores and teaching evaluations. You can find an excerpt of student comments below. Let me emphasize in particular that for the 4 semesters I have taught Math 54, my scores ranged from 6.8/7 to 7/7. Because of my high ratings, I was awarded the Outstanding Graduate Student Instructor award in 2012, at that time being only a second-year graduate student.

### **Excerpts from Teaching Evaluations**

- “Peyam prepares and organizes the discussions very well. He knows his stuff very well and explains it to us very clearly. He is the best TA I have ever met at UC Berkeley” (Calculus I, Spring 2011)
- “His teaching style is superb. I really liked his class and he was very open and willing to help each student [understand] the concepts. His teaching style is very clear and his enthusiasm is like no other” (Calculus I, Summer 2011)
- “I have had a hard time with Calculus in high school, but after taking this class with Peyam, I am not only enjoying it, but considering minoring in math” (Calculus I, Summer 2011)
- “The TA is extremely enthusiastic when teaching, which makes learning more fun. Additionally he is always incredibly prepared for section with an entire lesson plan that is very organized. He explains the concepts very clearly so that they are easy to understand. He also does harder questions to ensure we understand the topic thoroughly. Lastly, he is always available to students since he holds a lot of office hours” (Linear Algebra and Differential Equations, Fall 2011)
- “Where do I start...? Peyam is enthusiastic, encouraging, and BRILLIANT. His lectures are very structured/organized and EXTREMELY easy to follow. Also a very, very, VERY nice person. Awesome in office hours, always willing to meet/help with anything. There is actually NOTHING Peyam is doing wrong. He has perfected the art of teaching ‘Linear Algebra and Differential Equations.’ Can I please rate him higher than 7/7? Peyam is the

greatest TA I have ever had, and probably the best I will ever have” (Linear Algebra and Differential Equations, Fall 2011)

- “Everything he does is perfect. He takes time to work examples out completely and always shows us cool advanced examples. Nicest person I’ve ever met in my life. Perfection.” (Linear Algebra and Differential Equations, Summer 2012)
- “If Erdős was right in saying that there exists some book of beautiful proofs and perfect solutions for every theorem, owned by God, Peyam has probably found the book of how to teach Linear Algebra perfectly” (Upper-Division Linear Algebra, Spring 2013)
- “Peyam is extremely clear about both course materials and problem-solving methods. His sections and Office Hours are extremely helpful! Most importantly, his passion and devotion to math and this class truly inspire us in the study of math. Personally, the experience made me make up my mind to declare a double-major in Mathematics” (Upper-Division Linear Algebra, Spring 2013)
- “Peyam is PEYAMAZING!!! He comes extremely well-prepared and writes up the plan, then proceeds to give a highly energetic, informative, and entertaining lecture. I honestly do not know how I would have survived the course without him! I also appreciate the care he shows for each student individually. If every discussion section was like Peyams’, the world would be a much better place” (Linear Algebra and Differential Equations, Fall 2014)
- “The discussions are organized extremely well in a lecture-format. The explanations are thorough and made the subject material easier to understand. The quizzes are fair and the office hours are helpful. His enthusiasm and passion made the material more enjoyable to learn and is an inspiration for math majors” (Linear Algebra and Differential Equations, Spring 2015)