1 My teaching philosophy

I love learning and discovering new things. I believe that the pursuit of knowledge is the most important and fulfilling human endeavor. This is why I have made academia my career. Conversely, this is also why I have a strong belief in the importance of teaching. Our knowledge and discoveries are only useful as long as they are passed on to the next generation. Indeed, I would not be in the position I am now in if it were not for the wonderful teachers and professors who have taught me over the years. Now that I have been teaching for 4 years, I have become part of this cycle, and I enjoy it as much as doing research.

Over the years, I have come to recognize that a fundamental quality of a good teacher is that the teacher himself is learning as he teaches. He is learning how the students think, what their difficulties are, and how to be a more effective teacher. One might teach the same subject many times and discover new subtleties each time. Although this is not necessarily unique to mathematics, I believe it to be especially true in mathematics. Teaching mathematics is, in this way, a synergistic activity. I have heard some of my colleagues remark that they dread teaching the same class over and over again; however, I have never minded teaching the same class many times, as every time affords me a unique experience. I never teach a class the same way twice, because I draw on my previous experiences, and make adjustments, such as adding new material or even taking an entirely a new approach.

2 My experience

My teaching experience consists of 4 years as a PIC (Program In Computing) Assistant Adjunct Professor and before that I was a teaching assistant (TA) at UCLA for 5 years. I have taught a number of classes at UCLA, ranging from basic calculus and an introductory class on C++ for mathematics majors, to upper division complex analysis. As a result, I have had the opportunity to teach students whose backgrounds and interests range from the social sciences and (pre-)medicine to engineering and mathematics. I have also led a number of seminars for our research group, where I lectured on much more complex research topics.

During the four years as a PIC Assistant Adjunct Professor, my duties included developing a curriculum for an internet programming course (PIC 40A) which I taught every quarter. I revised some of the topics from quarter to quarter to keep up with changing internet technologies. I typically taught two classes per quarter, with one of the classes being a large 120 student class (PIC 10A introductory class to C++) and the other a smaller 30 student class (PIC 40A). I wrote and gave lectures, and managed between three to five TAs as well as two grading assistants in a typical quarter. In addition to lectures I held three office hours a week.
3 My teaching methods

Much preparation goes into a good lecture, and I always strive to present one that is well structured with many concrete examples spliced between the general theoretical developments. But a good lecture is not merely one that is presented well, but also one that is interesting and even exciting. When appropriate, I strive to incorporate interesting anecdotes and stories with a view to placing the material in an appropriate historical and mathematical perspective. My sole reason for doing this is to help students see the larger picture, so to speak, so that they might remember the major themes long after the class is over. I make it a point not to follow the book word for word; rather, I deliver the information in a consistent way so that the students encounter no difficulties reviewing the material from the book.

Because the lower division mathematics and PIC classes are large, it is difficult for the students to have much dialogue with the professor during the lecture. A few clarifying questions may be asked but, in general, a deeper discussion with students during lectures is not feasible. As a result, I consider office hours to be extremely important for both the students and me, as talking with students outside the lecture gives me a feel of what topics students are struggling with and how I should correspondingly adjust my lectures.

I strongly believe that students should not feel intimidated about talking to the professor, and I take pride in fostering an environment in which students are comfortable talking to me about any difficulties they have with the course material. I have seen students avoid attending office hours because they are not accustomed to it; they are nervous about it or feel like office hours will not be helpful. I have made a great effort to remove each of these potential obstacles. To that end, I discovered early on in teaching PIC courses that it was much more beneficial to have my office hours in the computer lab rather than in my office. I found that students are less intimidated in the more informal setting. As an added benefit, students could work on their projects and when they would run into a problem, they could simply raise their hand to talk to me there.

I never solve a problem directly for a student in office hours; rather, I clear up the confusion about concepts, which allows a student to solve the problem alone (perhaps with some hints). I am a very strong believer in the socratic method. Students understand the solution better if they are able to arrive at it with some guidance; they gain confidence in themselves and start to feel that the material is accessible to them.

I have always gone beyond what is expected to help my students reach their goals. I am always very prompt in handling emails from students and make myself as available as reasonably possible to students. I do not turn away students who have questions if I have time to talk to them. My door is open, whether I have official office hours at the time or not.
4 My strengths

I excel at writing lectures. I am able to organize even complex material in a way that students can grasp the topic. I am skilled at breaking complicated concepts into simple examples. My lecturing style is very clear and engaging. I am versatile and can lecture with power point or with chalk and blackboard. Especially in courses I have taught before, I can readily go “off script” and talk more in depth about any concept students seem particularly interested in. I do not get nervous talking in front of people, whether it is for 5 people in seminar or a 500 students in a lecture hall. I also manage my courses in a professional manner. I am never late, I am courteous in all my interactions and I do expect the same from my TAs. Overall, there is a lot of ”behind the scenes” work that goes into a course and I am as accomplished in managing those issues as in my teaching.

5 My accomplishments

I believe that my students have benefitted greatly from my teaching style – I give hard exams and yet my students rise to the challenge. My success is clearly reflected in my strong teaching evaluations; I have consistently received evaluations in the “excellent” range. UCLA evaluates instructors from 0 to 9 and my evaluations have consistently been above 8, even in classes with 100+ undergraduates where it is typically difficult to achieve such evaluations. On a number of occasions, students have remarked in evaluations that they would not have passed the class without my help and that I had made the material interesting and accessible. Several students have also told me in person that I am their favorite Professor or even the best Professor they have had at UCLA. It is very gratifying to receive such comments, which motivate me to try even harder next time. I will sum up with one of my favorite comments that a student wrote on an evaluation about me:

"Jukka clearly cares about his students and is passionate about teaching."