1. Teaching Philosophy

I believe the classroom experience should be an interactive one, rather than one where one individual lectures while other individuals transcribe. As a student, I find the prospect of sitting for an hour or two, being lectured at with little opportunity to respond or to apply the ideas that have just been explained to me, unpleasant. As a teacher, I consider the idea of writing furiously on the blackboard, with my back to the class uninterrupted for the same hour or two, ineffective. Although one responsibility of a teacher is to introduce new facts, formulas, and concepts into the classroom setting, another responsibility is to engage their students. The best teachers I have had are the ones who talked with me, rather than those who talked at me.

Not all classes are designed to be discussion-oriented. In many science, mathematics, and engineering courses, the lecturer may need to spend much of the class stating theorems and deriving formulas. However, even in this situation, interactions can be created. The teacher may ask students to provide intuition for various components of the formula, and should encourage students to provide examples to which to apply the theorem. The lecturer may introduce the necessary steps to solve a particular type of problem, but it can be the students who apply these steps to a given example.

This may seem applicable only to the small-classroom setting. After all, structuring a lecture with 600 or more students as a discussion may prove difficult, but the class must still be designed to engage as many students as possible. For example, Personalized Response Systems may be utilized in a large lecture class to survey which of a set of possible solutions is the correct one. Recognizing that students register for a course for reasons ranging from genuine passion for the material to fulfilling a requirement, and creating an interactive atmosphere within the classroom, can go a long way towards allowing the students to gain from the course whatever they need.

At present, I have had two opportunities to serve as an instructor in a formal setting. The first of these was as an undergraduate recitation instructor for the Mathematics Department at M.I.T., orchestrating a semi-weekly tutorial for approximately 30 students in which I assisted them in understanding the lecture material from an Ordinary Differential Equations (ODE) course. I learned two lessons from this very quickly: first, that I am not a super-genius, and second, that students do not always need a super-genius at the front of the classroom. I simply presented an example ODE problem, and then walked through the steps that led to its solution. This allowed me to connect with the students by getting them involved in recitation, whether they worked on the problems with me or in groups amongst themselves; this often resulted in the students presenting the solution to the class rather than my doing it.

Recently I served as the instructor for a 300-level Simulation course that is required for Industrial Engineering majors at Northwestern University. It was my first experience being completely responsible for all aspects of course delivery, including the assessment plan, as well as resolving student conflict and assigning final grades. I learned there is much more to teaching than just deciding what material should be presented in lecture. One important issue to consider is the style of teaching. For example, I made sure to know the names of 75% of my students by the end of the first class, and I often told relevant jokes and stories to engage the students at the start of lecture. Also important to consider is the proactive nature of learning. I utilized in-class
activities, and provided a term-long consulting case for which the students performed tasks that mirrored the course topics as the term progressed. Finally, it is important to consider the internalization of theory through application. I structured the course to be project-oriented, so that the simulation and statistics topics presented in lecture were then used in modeling recycling centers, drive-thru windows, and machine shops. Additionally, I found that engaging my students meant talking with them, not only having one student explain the correct solution, but also having one who did not solve it correctly explain their intuition (i.e., what caused them to select the answer they did) in order to allow them to feel comfortable moving forward with the class.

Teaching is difficult and rewarding, time-consuming and full of opportunities for assessment, for both my students and myself. There is much to gain from interacting with students, and there are also challenges. It is the combination of the two that makes teaching at the university level attractive to me, and it is why I feel I am, and will continue to be, a good teacher.