My teaching philosophy revolves around a single idea – communication. Three strategies encapsulate my approach to this goal: first is the encouragement of dialogue in a classroom setting, second is the promotion of discussion outside of lecture, and third is the improvement of mathematical communication by the student in written form.

In the classroom, I enthusiastically deliver my lectures, since it is my observation that excitement flows from teacher to student. I encourage dialogue among my students, while maintaining a structured learning environment. To foster casual intellectual communication, I provide opportunities for students to learn by discovery. I am self-reflective in my teaching, and I tailor my lessons and assessments to address the strengths and weaknesses of the individual classes. I construct comprehensive assessments that require computational, analytical, and qualitative skills as well as include writing components in order to allow each student to demonstrate his or her strengths. To address different learning styles, I enthusiastically present information in multiple ways including distributing handouts, incorporating Matlab and other interactive tools in my lessons, and introducing applications to complement the theories presented.

I encourage students to come to office hours or schedule meetings to discuss individual problems and issues that are difficult to address in a classroom setting. I believe individual meetings provide a good opportunity to motivate students in their pursuit of mathematics. I also believe that communication can be enhanced outside of the classroom by using modern technology. While teaching Matrix Analysis in the Fall of 2005, I developed a class website in order to create an effective organized arena for posting homework, notes, and updates for the class. A blog was also built for this course. After every lecture, I blogged a brief synopsis of the class and allowed students to post questions and comments. This allowed an open forum for the students to help themselves with topics being presented, while allowing me to better understand the strengths and weaknesses of the class. For my current Introduction to Engineering Computation course, I have incorporated discussion boards and a chat room for live discussion of course material. My next project will be to create ‘wiki’ pages for the main topics of the course. I am hopeful that this idea, in addition to other projects I am considering, will help build class unity outside of the classroom and improve the mathematical writing skills of the students.

From my experience as a teacher and a student, I recognize that there are inadequacies in the mathematical writing and proof skills of most undergraduates. Therefore, I would like to develop and/or teach a class similar to the Foundations of Mathematics course I took as an undergraduate. This course emphasized careful and precise expression of mathematical ideas and introduced several common proof techniques. This was a unique class in that it nurtured professor - student communication and allowed for each to teach the other.

In conclusion, my main goal as a teacher is to improve dialogue in and outside of the classroom as well as through written form. I hope to be able to present mathematics in a clear, innovative, and enthusiastic manner. Ultimately, I want my students to leave my class with an appreciation for the material and an ability to effectively communicate and utilize the subject matter that I taught them.