Statement of Teaching Philosophy

As a researcher in engineering field, it is my responsibility to play a role in the discovery of new knowledge. As a teacher, however, I believe an even greater responsibility is the perpetuation of the field and its current body of knowledge. Teaching allows me to promote the discipline to which I have devoted a significant portion of my life, and to show people the beauty of computation in terms of science, technology, and mathematics.

As a person who is committed to teaching, an important question that I have repeatedly asked myself is: how do people learn? My experience has led me to believe that there exist two main factors which influence learning - the independent construction of new knowledge by the student and the student's motivation to participate in this construction. I believe that these two forces are not completely independent and can strongly influence one another.

To me, a good teacher is one who not only has a sound knowledge of the course he is teaching and has up-to-date information about the subject, but also helps the students learn how to reason about concepts, be analytical thinkers, and be able to perform well while doing teamwork. I learned the above through experience. Although this is the hard way to learn how to be a better teacher, but the valuable lessons you learn stay with you throughout your career. In addition, in order to provide the opportunity for the student to independently construct knowledge, one must go beyond lecturing and design activities that are geared toward the personal discovery and understanding of the material. All the Homework assignments and projects should provide an opportunity for the student to either creatively find answers to new questions by associating seemingly disparate conceptual ideas.

To be successful in any technical field, one needs to have strong problem solving skills and analytical thinking ability. I highly value and encourage independent thinking among my students. Independent thinking is the foundation of their problem solving skills. If they always ask "why?" and "how?" when learning about new concepts, they will not just memorize but will understand them. Students don’t always ask those questions when they should, so to stimulate their curious minds, I sometimes ask them why they think what I am saying is right, or whether they can think of any better solution or explanation. This makes them reason and infer based on their prior experience, or sometimes even speculate.

By introducing and implementing above methods, it is my hope that my students will leave my classes as better learners and better people. Indeed, I think that teaching is one of the few professions that allow a human to have a positive, lasting impact on society and culture. The fact that I play such a significant role in the development and the cultivation of knowledge is a responsibility that I take very seriously and will always cherish.