Teaching Philosophy

I view learning as an *emergent process* in a student's mind, which leads to a discernible *change* in their knowledge, skills and abilities. Learning results from the experiences of a student in diverse contexts, both within and outside a classroom. I subscribe to Herbert Simon's view that "The teacher can advance learning by influencing what the student does to learn." These views have shaped my teaching philosophy. My role is to *motivate* students to learn and be an active companion in their learning process by providing expert guidance in a friendly environment. I provide students with different entry points into the subject matter.

It is often said that Engineering is problem solving. But, in practice, Engineering problems are ill defined with no unique "good" answer. With growing dependence on computational tools, the art of diagnosing and formulating mechanics problems has become as important as solving them. It is even more important for an engineer to develop the skills to visualize, conceptualize, and formulate a problem based on observations and critical thinking. As a teacher, I strive to provide a conceptual framework of engineering principles that students can successfully deploy: not only in solving problems but also in formulating physically correct engineering models. Successful engineers can separate the essentials from details when faced with a complex problem. I believe that the development of this skill is a life-long process, the foundation for which is laid at the undergraduate level. I initiate this process by presenting engaging examples of vibration problems in engineering practice. I show them how these seemingly *complex* problems can be solved using fundamental engineering mechanics principles. Striking a fine balance among computational, analytical, and experimental methods remains the greatest challenge for a modern mechanics educator, especially so in the context of increasing class sizes of diverse learning styles.

I believe that experiments reinforce a student's learning and consolidate abstract principles. Experiments readily appeal to most students and open doors of enquiry that eventually lead not only to a true appreciation or verification of engineering models or a concept, but also realize their limitations. It is this belief that motivates me to create experiments and demonstrations in every course I teach. Through carefully designed laboratory experiments, I ensure that the students not only develop skills of observation but also the ability to critically assess their observations. I have thoroughly revised the experiments for the fourth year undergraduate course in vibrations. I have designed and created a new laboratory experiment for a graduate course in vibrations. In addition to formal experiments in small groups, I use informal video demonstrations of everyday vibration problems and discuss how they can be solved, see the website `http://sites.mech.ubc.ca/~phani/mech364.html` for some examples.

I believe that effective teaching is possible through: direct communication with students, providing them timely feedback through assessments, and above all timely access. I spend time with students before and after every tutorial/lecture to bridge any gaps of formality and make them feel comfortable in asking questions. In addition to weekly office hours, I maintain open-doors policy for students to provide them timely access.

I am constantly evolving as a teacher and seek opportunities to broaden my horizon. A recent teaching scholarship from UBC enabled me to engage with Scholarship of Teaching and Learning (SoTL) community, which, no doubt, will have an impact in the future. After all said and done, teaching is for students and their experiences feedback into my evolving teaching journey.