Engineering is everywhere. My focus is mechatronics and dynamic systems and controls, which simplifies the world into a series of mass-spring-damper systems. As an instructor, it is my objective to lead students to this realization and empower them to use mathematical and engineering reasoning skills. For every course I teach, my goal is for a student who completes my class to fully understand and apply the fundamental concepts that are presented. I want all of my students to become better problem-solvers and decision-makers. In higher-level courses, I want students to extend their knowledge to practical applications to prepare them for a career as an engineer.

First and foremost, I have to offer students more than can be gained from reading the text alone; the time invested in attending my class must be rewarded. Teaching is more than delivering an excellent monologue to transmit facts, and it is my task to facilitate the transfer of knowledge and the development of analytical skills that are valuable not only inside, but also outside of my classroom. Structure is a vital feature of a well-taught course, as it establishes expectations and directs students to focus on the essentials. I find it best to present material in a variety of formats and offer multiple opportunities to practice the application of concepts in class. Variety in presentation methods helps keep students engaged and offers opportunities that cater to different learning styles. Learning is not a passive activity, and my goal is to make class an interactive, thought-provoking experience. I not only encourage, but also expect, students to ask questions and offer their own insights. Engineers are rarely asked to work individually. I use collaborative learning exercises to replicate industry experiences. A deeper understanding is gained if students are pushed to fully examine ideas from a variety of perspectives.

Students learn to study precisely for what instructors ask, and therefore it is important that I carefully consider what I ask of students. I test not solely for retention of facts, but also for the acquisition of problem-solving tools and engineering reasoning skills. Further, I evaluate students through a variety of methods: homework assignments, quizzes, projects, and exams. Assignments completed outside of class test a student’s ability to use his or her resources, and in-class assignments/quizzes assess both information retention and the ability to apply that information to critical thinking questions. Variety in evaluation format challenges students and provides a more complete assessment of knowledge gained from my course.

Engineering tools are powerful and can address many issues. From the vehicles we drive to the appliances we use to prepare food, engineering analysis is necessary to fully understand the world in which we live and provide us a better quality of life. I ultimately act as a guide who helps students confront a vast subject matter and who organizes information in a useful manner by emphasizing the critical points and connecting concepts to the real world. It is my goal that students appreciate the applicability of engineering analysis and how it impacts our lives every day, while providing them with the tools to begin solving the world’s problems. With this realization and their new knowledge base, students can actively use the tools gained from my course to improve their own decision-making and understanding of the world.