

*Teaching Philosophy*

Instilling a life-long passion for learning in students is paramount for the continued success of our profession due to the never ending demands by society to make our designs and practices more efficient, reliable, and sustainable. A student embarking on a career path in the field of civil engineering, whether it be in academia or industry, should have a comprehensive knowledge base, a wide-range of problem solving skills, and the ability to communicate and collaborate with peers. To motivate and enable students to gain the skills needed to succeed, I provide a challenging yet comfortable classroom environment that accommodates their diverse learning needs.

Creating a challenging environment begins with high expectations. Making it clear that I believe each individual is capable of mastering the material and that all students will be held to the same standards regardless of prior experience is critical for building confidence and helping students succeed. While students will be expected to achieve and surpass the tasks I set before them, I also want to acknowledge their differences in how they approach these tasks based on their backgrounds and preferred learning styles to provide a comfortable environment with the best support possible.

With this in mind, my teaching style consists of a mixture of techniques designed to address the unique learning styles and diversity present in my classroom. A general method for covering a topic within a course is to begin with a brief demo or simulation to motivate interest in the subject and tie the topic into the larger picture whether that be the overall scope of the course, other courses, or being in the field. After encouraging students to postulate explanations for the behavior they are observing, the physics or theory behind the behavior will be covered in detail through the traditional method of transcribing on a board. During this time, example problems will be given and worked out in an interactive manner. Time permitting, students will engage in solving a problem on their own or with a small group and multiple methods of solution will be outlined if available so that students are exposed to a variety of perspectives on how to approach and solve different problems. After having covered the basic concepts, questions involving extensions of these concepts or different applications will be proposed to instigate critical thinking as well as motivate the next subject to be covered.

Homework, exams, and open-ended projects will be utilized to evaluate the students' mastery of the course material. Emphasis will be placed on frequent low-stakes assignments so that students have ample feedback about their performance and guidance on what they can do to improve their skills. To achieve a sense of community and encourage the development of communication and collaboration skills, students will be evaluated using explicit criteria and not on a curve. This allows students to recognize whether or not they have mastered the material because their grade is based on their own achievements and not dependent on the performance of their fellow students. An open-ended project, such as proposing and designing a structural solution to a pedestrian traffic problem, challenges students to use the knowledge and problem-solving skills they have gained in a way that surpasses the bounds of a typical homework or exam problem and is more realistic of what they will experience in the field. A student who completes one of my courses will not only gain a basic understanding of the knowledge and ability to solve problems directly related to the material; the student will

become more adept at communicating and collaborating with their colleagues and gain valuable problem solving skills that translate to other aspects of their life.

Every student has the potential to be a valuable member of our profession. My classroom is intended to be a welcoming environment that serves as a safe haven for intellectual curiosity and discovery regardless of gender, race, or socioeconomic background. An inclusive sense of community will be encouraged through diverse work groups, frequent communication of additional resources and support, and in-class activities that encourage students to create their own study group or support network outside of the classroom. Facilitating this sense of community in the classroom is important for encouraging students to collaborate on assignments, reinforcing knowledge gained in class through communication with their peers, and helping students gain insight into different ways to approach or think about a problem. As an instructor, I strive to be accessible and approachable to students by instituting an open door office hour policy as well as being available before and after class to answer questions.

Empowering students to be successful in civil engineering begins in the classroom and extends beyond through extracurricular activities such as competitions, conferences, and interaction with faculty or professionals within the field. As an instructor, I enjoy being involved and mentoring students in activities that require them to apply the abstract concepts they have learned in a course to real world applications such as building a concrete canoe or a steel bridge for the annual ASCE competitions. These activities provide a motivation for learning the material in courses and provide an opportunity for students to practice their collaboration and communication skills. Organizing field trips to actual construction sites or professional engineering offices to show students how the concepts they are learning are utilized in the real world is also valuable in providing a tangible product for abstract concepts.

While my approach to teaching is intended to reach a wide array of students with different learning preferences, there is always room to improve. To serve students to the best of my ability, it is imperative that students provide feedback in terms of what they find helpful and what they would like to see change. While midterm and final evaluations are useful and will be employed, students will also be encouraged to write feedback and questions about material content for a minute at the end of each lecture during the first couple of weeks to evaluate what can be immediately improved and what common questions are not being adequately addressed in the lecture. In addition to student feedback, attending workshops, conferences, and reading articles published with respect to engineering education will be useful tools in developing and improving my teaching style.

***Teaching Interests***

I am interested in teaching at the undergraduate and graduate level. While I would be willing to teach any undergraduate course in structural engineering, my strengths and interest lie with the lower level undergraduate courses such as Statics, Dynamics, Solid Mechanics and Theory of Structures. I would also be interested in the upper level undergraduate courses such as Steel Design, Reinforced Concrete Design, and Fluid Mechanics. At the graduate level, I would be interested in teaching courses related to Finite Element Methods in Solids and Structures, Elastic Stability, Plastic Analysis, and Advanced Structural Analysis. A course I would like to develop based on my research would focus on Performance Based Seismic Design or Earthquake Engineering.