

## **Sugandha Singh | Teaching Statement**

Civil Engineering professionals have an immense and overwhelming responsibility to build extraordinary infrastructures while ensuring public safety from any infrastructural collapse. Hence, my classes are structured such that the students understand the importance of our profession as well as the application of the course in their major. In addition to understanding the importance of ensuring safety in the infrastructural development, the field of Civil Engineering requires visualization of real-life problems. I believe that one of the most effective ways to teach civil engineering classes is to help students make a connection between complicated theories in the textbook with simple and realistic examples.

As an instructor of record, I have realized that every semester, the first class of a course is as important as any other class of the semester where the main task of an instructor is to make students interested in the course they are taking. On my very first class as an instructor of the laboratory course “Structural Behavior & Measurement,” I realized that a lot of students were enrolled in the course to finish graduation requirement and piquing their interest was going to be difficult. Moreover, the students in the course were from various majors and not just structural engineering. That’s why, I started with explaining them the scenarios where all the experiments which we conducted throughout the semester, would help them in their jobs in their respective fields. Moreover, I also ensure that by understanding the importance of each experiment, they also understood the importance of the course in the safety of infrastructure they may design or construct in the future.

As a student, I always find it very helpful to visualize complex civil engineering theories and problems by taking inspiration from subjects surrounding me. One of my undergraduate professors always used to remind us that sometimes all it takes is a stroll down the block to understand the vast world of Civil Engineering. Hence, I encourage my students to take inspiration from their surroundings in understanding the different experiments and theories. For example, the calculation of the moment of inertia is a task that students performed in every experiment. Hence, I conducted informal discussions with my students during the experiments on how the moment of inertia affected the effort, they needed to lift laboratory weights as compared to the weights they lift in a gymnasium, thus, keeping them interested in structures as well as in class.

I also make sure that my classes have active participation from students. Even though the laboratory course I taught for four semesters is very hands-on, the students do tend to just follow the procedure as mentioned in the books. However, before starting each experiment, I made sure that the entire class get good enough background on the theories we were testing. The whole class read through the assumptions in each theory together and students were asked to explain what each of the assumptions meant physically as well as how theoretical and experimental results will differ due to the assumptions. This exercise was followed up by student discussion of differences in theory and experiment results. In this phase, students could easily articulate the key reasons for differences between theoretical and experimental results which was further reflected their reports.

As a laboratory instructor, I was able to apply a range of different teaching techniques to follow my teaching philosophy. Since the core courses such as statics, dynamics, mechanics of materials and structural analysis lay the foundation of successful future professionals, I am very excited to teach these courses as a teaching faculty. I hope my experience is sufficient for my consideration as a Teaching Faculty and I hope to hear back from you.