

Teaching Statement

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My teacher's words still resonate in my ears—"A good teacher does not merely cover the syllabus, but uncovers part of it so that the student discovers the rest!"

Teaching Philosophy. The opportunity to teach (and learn) from students is one of the key reasons why I aspire to pursue a career in academia. Throughout my life, my teachers have been the foremost inspiration for my academic success, and it has since been my aspiration to similarly serve as a constructive influence on my students. Teaching, to me, is not just about being prepared and organized with the material, eloquently delivering lectures and making yourself available outside class, but it is also about demonstrating to students your genuine passion for the subject, thereby kindling their interest. I will employ the following methods (the 4-Es) to improve the holistic learning experience in my class: (i) *Explain context before concept*: Students learn better if they understand why learn what they learn. I will provide practical applications to various concepts and their significance in real world, making the class both exciting and relevant. (ii) *Emphasize learning not scoring*: As a teacher, I will impress upon the students that my objective for them is to internalize the material and not to feel pressured by exams or approach them as a competition. This gives slow-learners the confidence to learn at their pace, promoting inclusive growth in class. (iii) *Evaluate and re-orient*: As each class is unique, it is important to proactively refocus the course material and teaching style based on self-evaluation and feedback from students. (iv) *Encourage open-ended projects*: Given the limited time schedule, it is naturally difficult to discuss all aspects of the topic in class and hence, there is always more to learn beyond what is taught in the classroom. Also, with the wealth of resources available online and elsewhere, it is key to give students the opportunity to explore and collaborate through relevant open-ended projects. Through these principles, I strongly believe that I would be able to effectively deliver the course content and exceed expectations as a course instructor. I also think teaching would reinforce my understanding of the subject and my interaction with a diverse set of students can lead to interesting research directions.

Teaching Interests. As such, I am eager to teach both undergraduate and graduate level courses related to computer engineering and VLSI. Specifically, I am well equipped to instruct introductory and advanced courses on logic design, circuit theory, computer architecture, electronics design automation, digital integrated circuits, ASIC design and VLSI for signal processing. I am also keen to develop new graduate-level courses in the above areas that highlight the recent trends in technology and foster early research ideas. To this end, I would be interested to teach a course that deals with new computing models for emerging application domains such as machine learning, data analytics, computer vision *etc.*

Teaching Experience. During my admission to Purdue, I was awarded a 2-year graduate teaching assistantship. I was one of the six teaching assistants (TA) for 3 offerings of the Linear Circuit Analysis (ECE 201) course, which typically has 4 course instructors and an enrollment of more than 500 sophomore and junior students from all disciplines of engineering. From the second offering, I was appointed the head-teaching assistant for the course. Being a teaching assistant for ECE 201 gave me the opportunity to interact with a very diverse set of students with varying levels of background in electrical engineering. I was able to successfully mentor the students by understanding their objective in taking the course and interacting with them at the right level of expertise during the office hours. I also significantly aided in preparing course materials and examinations and delivered recitation sessions. I have also volunteered to prepare/conduct lab sessions, lectures and examinations for graduate courses *viz.* Digital Systems Design Automation (ECE 595) and System-on-Chip Design (ECE 695R).

Mentoring Experience. In addition to my experiences as a TA, I have also mentored undergraduate and graduate students on various research projects. Over the last 3 years, I have actively engaged with 4 teams from the Digital Systems Design Automation (ECE 595) course and 2 groups from the System-on-Chip Design (ECE 695R) course, who were interested in trying out preliminary research ideas as part of their course projects. These projects eventually evolved beyond the courses into full-fledged research endeavors that

resulted in 3 publications at top-tier research conferences (Design Automation Conference—DAC, Design Automation and Test at Europe—DATE), with 2 more under progress. Finally, I mentored one undergraduate student as part of a summer research program and a graduate student on a foreign exchange program. Working in these projects allowed me to share my experiences as a researcher, initiate and refine research discussions, and ultimately enabled me to guide new students through the entire research cycle from inception of an idea to shaping it into a concrete research problem to finally publishing and presenting it at a top-tier venue.

In summary, my academic experiences thus far have left me with a strong interest in teaching. I look forward to an opportunity to continue my journey, both growing as a teacher and helping and benefiting from the next generation.