

Teaching Philosophy Statement

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Teaching Objective. I am very grateful to all my teachers during my study. They have given me valuable guidance over my undergraduate learning and graduate research. The influences of a teacher are more than just teaching the fundamental content of the courses in a class, even though it is indeed important in assisting the students. Beyond that, the teacher can function more to foster the critical thinking of the students, help them develop problem-solving strategies, and acquire life-long learning skills. On the other hand, the class time is indeed somewhat short, making it impossible to cover all the aspects and guarantee that everyone has already understood. So I think that the major task of a teacher is to delineate the outline of the subject, focus on some points, and stimulate the creative thinking and learning interest of the students. However, this can be especially challenging for some abstract courses. From my personal experience, I struggled some for the analytical dynamics during my undergraduate study. Even though challenging, starting from the students' current understandings, considering their responses and feedback, and evaluating the progress, I believe it is possible to improve the teaching of students gradually by starting from concrete to abstract, from specific to general.

Most people had been students once for some while, and some may have been troubled during the class learning. From my perspective, because most of my curriculums are about science and technology, I always hoped that my teacher can not only teach me the knowledge itself, but also introduce more about the background and the importance, and how it can be used. For example, even though the more compact and abstract presentation of an idea is sometimes unavoidable and beautiful, but I believe even a single example could make the abstract idea more vivid, and it is better if the example is from someone's research or daily life. The students would become more motivated to devote to the learning by themselves instead of just to get a satisfactory score. Moreover, if the roots of the

knowledge are explained and the knowledge forms an organic web with the pre-obtained one, the leaning will also become easier. So, based on my experience as a student and my understanding of the teaching purpose, I will aim at stimulating the students' interest first, help them understand how the knowledge in this course is related to my research and our lives, and the teaching should also start from easy to difficult, from concrete to abstract.

My teaching experiences and philosophy. I had been a teaching assistant for two semesters at Tsinghua University, teaching *Electromagnetics*. I am responsible for grading the homework, solving the exercises together with the students in a classroom, and helping students go over the class content. Compared with the students, since I have already passed this course and researched for two years, I can have a better grasp over the whole picture and understand what's fundamental and what are the more direct and useful conclusions. Taking the Maxwell equation as an example, if it is a static electromagnetic field, I can give them examples like each two of the four equations without concerning time can be used to solve the electric and magnetic fields in a capacitor and coil respectively. But for a time-evolved electromagnetic wave, the Maxwell equation expressed in vector and scalar potentials is more useful. I can point out the important conclusions and the inner connections for them with my personal experience. Of course, my efforts are just to make some landmarks on their learning processes for them. To fully master and wield the knowledge to its full potential, they need to understand the whole picture by themselves, otherwise, the limitations may be overlooked.

My teaching objective is helping the students get the knowledge outline of this course and have some focuses on the important points. I hope my teaching will help them go through the details more smoothly and spur their interest to explore more deeply out of the class. For the class contents and resources, I will start from the easy and concrete ones, like some application examples, better with some of my research and learning experiences, end with the general and abstract conclusions. I will assess my teaching with some out-of-box thinking exercises. Depending on the interest of different students, I will provide some additional materials for them to learn, which should not be included in the exam to increase the burden and let them feel too stressed. My primary goal is helping the students get the

fundamental ideas and spirits of this course, and they can pick up the details when they need them in their future careers, which will benefit them for the time in classes.

Students and teachers. Not only is teaching the responsibility of teachers to share the knowledge and offer guidance to the students during learning, but I believe teaching can also have wonderful rewards for teachers. Teaching is a proud job to contribute to education, and it would bring satisfaction and a sense of worth if students make progress in their learning with the teacher's help. The knowledge in the classroom will someday make a difference in our lives. The eager learning of the students may rejuvenate the teacher and gain a passion for teaching and research. During orienting the students to a discipline, the teacher also has an opportunity to revisit this area in association with his research. The interaction between students and teachers will benefit both of them and make the teaching more successful and could inspire the students and teachers at the same time.