

# Teaching Statement

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## Teaching Philosophy

Economics is a powerful tool for analyzing social phenomena and discovering potential causal relationships. In teaching economics, my goals are making my students excited and curious about economics and apply economics on a daily basis. Through their learning process, I try my best to introduce my students theoretical concepts that linked closely to their life experiences and teach them analytical tools that they can use not only in economics but also in other subjects, future jobs and their everyday lives. In my teaching, I also emphasize on finding appropriate ways to help students at different levels and in various backgrounds. I believe all students can acquire both intellectual training and practical skills from my classes. These pedagogical goals are formed by my personal experience as an instructor, a teaching assistant, an engineering graduate, and a practitioner in the financial industry.

When teaching economics, I have found the most difficult part is to help students start to see things through the lens of economics. The basic ideas such as supply and demand may not be hard for them to understand. However, students usually do not see how these concepts are related to the real world. In my teaching, I link these economic ideas through class activities such as experiments, news reading, and group discussions about school policies to give students some experiences that are closer to their daily lives. For instance, through an in-class market experiment, my students were able to act as buyers and sellers of used cars in a centralized market, and try their goals were to transact with each other. When I demonstrated how their transactions pinned down the equilibrium prices after they participated in the market, many students said the experiment really helped them grasp the idea of the invisible hand. These learning activities really connect economics with students' lived experiences and allow them to internalize economics.

I also emphasize the importance of learning by doing in my teaching. In previous courses, I created challenging exercises for students to discuss in groups and let them struggle through the exercises without my help first. These exercises allowed them to review economic concepts and apply them in real-world settings. When facing those in-class challenges, students were forced to think through what they learned. They were also encouraged to learn from their peers and their learning became more *active*. After they worked on the problems and had class discussions, many students suggested that the exercises reinforced their understanding. The discussions with other students also helped them learn faster and see how economics can be applied in different scenarios.

I believe students should learn in accordance with their aptitude. As a current economics student and a former engineering student, I understand students with different backgrounds may have different learning blind spots. For students with less solid mathematical backgrounds, I designed numerical exercises for them to work on in order to help them acquire the basic analytical tools in economics. Students in science and engineering usually think economics is easy and do not pay much attention to intuitions and implications behind economic phenomena. To guide them into the economic thinking, I designed exercises with more real-world

applications to help them appreciate the power of economics with relatively simple math. Moreover, I also allow students with different backgrounds to learn from each other. When doing in-class activities, students partnered with their peers to solve problems. Those students who finished their exercises earlier were encouraged to help their fellows and answered questions from them. In this way, students got chances to share what they learned and see things from others' perspectives. In my teaching, students at all levels can appreciate the beauty of economics and benefit from learning it.

After having a research internship in a financial company, I got a clearer idea about what economists can contribute in industry. What makes economists stand out in industry is the ability to connect seemingly uncorrelated factors and make causal inferences with quantitative tools from data. With proper training, I believe students are able to capture key features by using analytical tools in economics when they face abstract questions. More and more departments are starting to provide courses like computational economics or empirical econometrics to students. However, I still see the need to connect modern data science tools such as machine learning, neural networks and programming to traditional economics. Although I have not gotten a chance to teach econometrics or data science courses, in the near future, I would like to initiate courses with emphasis on the connection between economic concepts and programming skills which allows students to learn data science in an economic way.

To sum up, my pedagogical goals are preparing students in all backgrounds to become little economists who can analyze things around them with economics after taking my courses. At the same time, I would also like to bring them practical skills that they can apply in their future careers.

## Teaching Experience and Future Teaching Plan

I have been serving as both a lead instructor and a teaching assistant for several courses. My teaching career started from being a teaching assistant for the first-year PhD macroeconomic theory sequence. In the one-year period, I not only strengthened my theoretical background in macroeconomics but also learned how to effectively communicate and interact with graduate students.

After the graduate teaching experience, I started to serve as a teaching assistant for undergraduate students in introductory microeconomics and macroeconomics. In the beginning of my undergraduate teaching, I still applied teaching styles similar to my graduate teaching because I had not yet gotten a sense of my students' background and proclivities, and I was not able to help my students learn effectively. This experience made me realize the importance of knowing my audience, and I started to pay more attention to designing my materials and in-class activities. Since then, I have gotten more and more positive feedback from my students and there was also significant improvement in my overall teaching effectiveness evaluations.

In the summer of 2019, I led an introductory macroeconomic class as an instructor for the first time. Designing a course from scratch was not easy, yet it was really rewarding. In my course, I combined the tools I developed in my previous teaching, such as in-class experiments and discussions about current macroeconomic conditions. Moreover, I was able to go into some contents that were not usually covered in an introductory macroeconomics class, such

as growth theory with technology change and human capital accumulation.

From my teaching experience and my research experience, I would feel confident offering introductory microeconomics/macroeconomics, intermediate microeconomics/macroeconomics, econometrics/statistics, and mathematics for economics in my future teaching. Besides these courses, I would also like to develop data science courses with rigorous training in applied econometric techniques for casual inference, machine learning, neural networks and programming.

## Teaching Evaluation and Selected Comments from Students

My teaching evaluations so far are summarized in the table below. More detailed teaching evaluation forms are available upon request.

Table 1: Summary of Teaching Evaluation

Course	Year	Role	Level	Average Score
Advanced Macroeconomic Theory	2016	Teaching Assistant	Graduate	4.48
Introductory Macroeconomics	2017	Teaching Assistant	Undergraduate	4.09
Introductory Macroeconomics	2018	Teaching Assistant	Undergraduate	4.24
Introductory Microeconomics	2018	Teaching Assistant	Undergraduate	4.33
Introductory Macroeconomics	2019	Instructor	Undergraduate	4.39
Introductory Microeconomics	2019	Teaching Assistant	Undergraduate	4.40
Introductory Macroeconomics	2019	Teaching Assistant	Undergraduate	4.32

Here are some selected comments from my students. They were chosen for highlighting my teaching philosophy above.

*“Ying-Kai was extremely helpful, always available to help, and went beyond what was required of him to help us. We found the course material to be challenging, and he was always open and willing to help. I learned a lot from him, and found the examples he went through in recitation to be effective in supplementing the material from lecture. Lastly, I am very appreciative of the lengths he took to help us out, even with all of his own individual work on top of it. Thank you Ying Kai!!”*

*“I really liked the group activities. Every recitation, we had to complete an assignment with partners of our choosing and then went over it as a class. Completing this with group members allowed us to help one another and enhanced my understanding of the material.”*

*“He was very excited to teach and was my favorite teacher this semester. Very nice to interact with.”*

*“Ying Kai was always quick to answer questions and help me understand what we learned in class that week. I was usually pretty confused walking into recitation but walked out understanding a lot more.”*