

This is a course calibrated for second-year PhD students in economics. I will teach assuming familiarity with game theory at the level of the first-year PhD sequence; roughly, this comprises chapters 7-9 and 23 of Mas-Colell, Whinston, and Green.

The goal of this course is to introduce students to core tools and concepts that are used in modern game theory research, for example:

1. How to prove existence results using Kakutani's theorem.
2. Monotone comparative statics using the Topkis-Milgrom-Shannon theorem.
3. One-dimensional mechanism design via the envelope theorem and virtual values.

We'll spend the first half of the semester covering tools and concepts, and the second half studying and discussing material that is near the research frontier.