Nanyang Technological University
HE3002/HE302 Game Theory and Applications to Social Sciences
Semester 1, Academic Year 2014/2015

General information

Meeting schedule

Lectures: Tuesdays, 9:30-11:30am       Venue: LT4

Tutorials: Mondays, 9:30-10:30am (TR+159, T1), 10:30-11:30am (TR+159, T2), 11:30am-12:30pm (TR+111, T3), 12:30-1:30pm (TR+111, T4)

Instructor
Fuhai Hong
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Office hours: By appointment

Course description

Game theoretical models are a standard analytical tool in economics and social sciences. This course is designed to introduce undergraduate students to the basics of game theory and its applications. It aims to deepen students' understanding of strategic behavior with and without asymmetric information. On the completion of this course, students are expected to be familiarized with the basic concepts and methods of non-cooperative game theory, and be able to analyze and solve for equilibria of simple games.

Prerequisites
Basic algebra, calculus and probability
References
You can download course materials from the edveNTUre. There is no required textbook. However, the following references would be useful.

   This book is also titled “Game Theory for Applied Economists”.

Grading policy
Your grade will be based on your performance in two assignments (10%), a closed-book mid-term quiz (20%), a closed-book final exam (60%) and your class participation (10%). For assignments, you can submit your works in groups of no more than 3 people. Each member in a group will have the same grade for that particular assignment. For one assignment, one student should not participate in more than one group. The mid-term quiz will cover static and dynamic games with complete information. The final exam will cover all the topics of this course.

Academic integrity
Cheating and plagiarism are not tolerated.

Course outline
1. Basic Elements of Non-cooperative Games
2. Static Games of Complete Information (Nash Equilibrium)
3. Dynamic Games of Complete Information (Subgame Perfect Nash Equilibrium)
4. Static Games of Incomplete Information (Bayesian Nash Equilibrium)
5. Dynamic Games of Incomplete Information (Perfect Bayesian Equilibrium)