

ECU44012/14: Economic Theory

Hilary Term 2022

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Module Content:

Game theory has become a powerful tool of economic analysis for situations where a small number of economic agents (firms, governments, individuals) behave interdependently (anticipate how their decisions affect others and how these others will then react). This module will analyse simple games, introduce the most standard equilibrium concepts, and focus on applications of these techniques in a variety of economic settings. We will devote attention to applications in industrial organization, political economy, auctions. Some attention will be paid to recent developments in game theory and behavioural economics.

Topics covered will include the following:

5 ECTS:

- Introduction: What is Game Theory?
- Simultaneous Move Games with Perfect Information: Nash Equilibrium
- Simultaneous Move Games with Perfect Information: Mixed Strategy Equilibrium
- Simultaneous Move Games with Incomplete Information: Bayesian Nash Equilibrium
- Sequential Games with Perfect Information: Subgame Perfect Equilibrium

10 ECTS:

In addition to the topics covered in the 5 ECTS module, the 10 ECTS module will also cover the following topics:

- Sequential Games with Incomplete Information: Perfect Bayesian Equilibrium
- Signalling and cheap talk

Lectures:

- Live Lectures Wednesdays from 12:00-14:00 in Room 3074 in the Arts Building
- Lectures will be recorded if possible, note that questions asked during the lecture will be recorded, I will not be editing the lectures.

Tutorials:

- Students will be in two groups and the tutorial for each group will alternate each week as follows:
 - Group A: Feb 07, Feb 21, Apr 03, Apr 11
 - Group B: Feb 08, Feb 22, Apr 04, Apr 12
- See Blackboard for group lists.
- If you don't see your name on a list, let me know as soon as possible.
- Problem set questions will be available on Blackboard and should be attempted in advance of the tutorial.

Assessment:

5 ECTS:

There will be an assignment due part-way through the term which will account for 50% of the final grade. The final exam will account for the remaining 50% of the grade.

10 ECTS:

There will be two pieces of coursework due throughout the term: an assignment (30%) and a problem set (20%). The final exam will account for the remaining 50% of the grade.

Readings:

The usual textbook for the module is Joseph E. Harrington, Jr., 2015, *Games, Strategies and Decision Making*, Worth Publishers. An alternative text is Martin J. Osborne (2009), *An Introduction to Game Theory*, Oxford University Press. As you may not have access to the library during this module, I will try to suggest other freely available online resources that you can use instead. A list will be provided on Blackboard and will be updated throughout the term.

Office Hours:

- Online only, Fridays from 12:00-14:00.
- Meetings will take place using Microsoft Teams.
- You can book an appointment here:
<https://outlook.office365.com/owa/calendar/KreuserOfficeHours@TCDUD.onmicrosoft.com/bookings/>