Game Theory | ECP77043

Year	1
ECTS Credits	5
Contact Hours	10 hours of lectures and 5 hours of tutorials
Pre-Requisite	Nil
Semester	1
Module Leader and Lecturer	Professor Tara Mitchell
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Module Outline:
Game theory has become a powerful tool of economic analysis for situations where a small number of economic agents (firms, governments, individuals) behave interdependently, i.e. anticipate how their decisions affect others and how these others will then react. This module will introduce the building blocks of game theory and present the most important equilibrium concepts used to solve games. These techniques will then be applied to solve examples based on a variety of economic settings.

Topics covered include:
1. Strategic Form Games - Nash Equilibrium
2. Bayesian Games - Bayesian-Nash Equilibrium
3. Extensive Form Games – Subgame Perfect Equilibrium
4. Perfect Bayesian Equilibrium, Sequential Equilibrium, Signalling

Module Learning Outcomes:
On completion of the module, students will be able to:

- Describe models in game theory, especially as they relate to economics
- Use game theory models to analyse applied economic problems
- Derive economic insights from models in game theory

Assessment
Assessment for the module is based on a final exam accounting for 70% of the grade. In addition, students will hand in weekly problem sets making up the remaining 30%.

Recommended Reading List:
Primary textbook:
Jehle, Geoffrey A. and Philip J. Reny (2011). *Advanced microeconomic theory*. 3rd ed. Harlow: Financial Times - Prentice Hall

Gibbons, R. (1997), “An Introduction to Applicable Game Theory,” *Journal of Economic Perspectives*, Vol. 11, No. 1 (Winter 1997), pp. 127-149.