

ECU44271 — Game Theory

Module Information	
Module Code	ECU44271
Module Title	Game Theory
Department	Economics
Year Group	Senior Sophister
Module Personnel	Professor Tara Mitchell
Academic Year	2026–27
Credit Weighting	10 credits
Semester	Semester 1
Contact Hours	22 hours of lectures and 4 hours of tutorials

Module Content	
Module Description	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: • 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

Module Content	
	• Sequential Games with Incomplete Information: Perfect Bayesian Equilibrium • Signalling and cheap talk
Module Learning Aims	By the end of the module, students will be conversant with the core foundations of game theory and will be able to apply these tools to analyse economic problems.
Learning Outcomes	Upon successful completion, 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 • Satisfactory completion of this module will contribute to the development of the following key skills: • Ability to apply game theoretic techniques to economic problems • Ability to understand game-theoretic formulations of problems • Ability to derive economic insights from models in game theory
Indicative Reading / Resources	Harrington, J. E., Jr. (2015). Games, Strategies and Decision Making. Worth Publishers.

Assessment	
Assessment Components	Assignment – 30%; In-person final exam – 70%
Assessment Details	

Additional Information	
Prerequisites	ECU33012 – Economic Analysis B (micro part) OR ECU33124 – Behavioural Economics
Co-requisites	None
Any other information	Module website: Blackboard