IB3H9-15 Strategic Games: Thinking rationally about business, policy and real life

26/27

Department
Warwick Business School
Level
Undergraduate Level 3
Module leader
Despoina Alempaki
Credit value
15
Module duration
10 weeks
Assessment
Multiple
Study location
University of Warwick main campus, Coventry

Description

Introductory description

This is an elective module available for WBS and non-WBS students*. To find detailed availability and to apply for this module, log in to my.wbs.ac.uk using your normal IT login details and apply via the my.wbs module application system. Once you've secured a place on my.wbs you should apply via your home department's usual process, which usually takes place via eVision. Note that you do not require the module leader's permission to study a WBS module, so please do not contact them to request it.

Most choices involve interaction, and cannot be made successfully without taking that into account. Our choices affect others, and their choices affect us. Such interactive situations have come to be called "games", and "game theory" is a way of analysing the strategies that can be used in these games, and the strategies that should be used. The "theory" part of game theory starts by assuming everyone is rational, and then works out what actions a rational person (or animal, or machine – personhood is not required, but preferences are) will do in any given interactive situation. Rationality means, roughly, that everyone is trying to maximise the expected benefit from the choices they make. This does not exclude the possibility that they get benefits

from how well or how poorly others do: we are entitled to be competitive, spiteful, or altruistic.

This module provides a relatively non-technical and highly selective introduction to game theory and its applications. The focus will be on strategic situations that are either likely to be encountered in everyday life, that shed light on everyday interactions, or are simply fundamentally interesting.

*Please note that Economics students are unable to take this module due to overlapping content in Year 1 and 2 Economics modules.

Module web page

Module aims

The principal module aims are:

1. To develop students' theoretical and practical understanding of strategic decisions using tools drawn from economics, game theory, and psychology.
2. To enable students to interpret social and psychological situations within this framework.
3. To encourage students to take a broad view of policy decisions that have strategic implications, and to predict the consequences of those policies.

Outline syllabus

This is an indicative module outline only to give an indication of the sort of topics that may be covered. Actual sessions held may differ.

The syllabus will include such topics as:

- Definition of strategic situation and equilibrium.
- Backward induction and rollback equilibrium.
- Strategic moves and the problem of credibility.
- Nash equilibrium in pure and mixed strategies.
- The prisoner's dilemma and the tragedy of the commons.
- Asymmetric information and unravelling.
- Screening and Signalling.
- Matching games and the deferred acceptance algorithm.
- Bargaining and negotiation.
- Evolutionary games.
- Auction theory and the winner's curse.
- Intrapersonal game.

Learning outcomes

By the end of the module, students should be able to:

- Deploy the basic concepts of strategic thinking, in a largely non-mathematical way. These concepts include strategy, Nash equilibrium, prisoner's dilemma, backward induction, winner's curse, informational unravelling, and asymmetric information, costly signalling, and

matching.
- Demonstrate logical and critical thinking skills in being able to recognize the potentially counter-intuitive effects of strategic decisions.
- Recognise the links between situations that differ widely in content but share common underlying strategic structures.
- Distinguish between the outcome of logical analysis and 'psychological' analysis of strategic situations.
- Discuss critically the strategic thinking underlying a broad range of decisions taken from all aspects of life.
- Analyse strategic situations and act so as to achieve optimal outcomes, including negotiations with others, and even with your own future selves.

Indicative reading list

Reading lists can be found in Talis

Subject specific skills

Distinguish between the mathematical and economic concept of the correct strategy, and the 'psychological' concept, meaning what might be the correct strategy given what others are likely to do.
Analyze how strategic thinking can influence success in all aspects of life.

Transferable skills

Perspective taking.
Logical analysis.
Presentation skills and argumentation.

Study

Study time

Type	Required
Lectures	10 sessions of 1 hour (7%)
Seminars	9 sessions of 1 hour (6%)
Online learning (scheduled sessions)	2 sessions of 1 hour (1%)
Online learning (independent)	10 sessions of 1 hour (7%)
Private study	47 hours (31%)
Assessment	72 hours (48%)
Total	150 hours

Private study description

Private Study.

Costs

No further costs have been identified for this module.

Assessment

You do not need to pass all assessment components to pass the module.

Assessment group D8

	Weighting	Study time	Eligible for self-certification
Participation	10%	7 hours	No
Centrally-timetabled examination (On-campus)	90%	65 hours	No
Examination			

- Graph paper
- Answerbook Green (8 page)
- Students may use a calculator

Assessment group R3

	Weighting	Study time	Eligible for self-certification
In-person Examination	100%		No
Examination			

- Students may use a calculator
- Graph paper
- Answerbook Green (8 page)

Feedback on assessment

Feedback will be provided via my.wbs.

Past exam papers for IB3H9

Availability

Pre-requisites

Economics students are unable to take this module due to content overlap in Year 1 and 2 Economics modules.

There is currently no information about the courses for which this module is core or optional.