Mathematical Economics

Module Code: ECO00007H Credits: 20 Year: 3 Terms: 1-2
Contact Hours: 32 hours of lectures, 6 one-hour Seminars (38 contact hours)
Module Organiser: Dr A Bhattacharya

Overview:

In this module, we study how people make decisions in strategic situations – that is, we study some topics in Game Theory. Given that this field originally emerged as a subfield of applied mathematics, we naturally employ mathematics as our tool to analyse strategic interactions.

Aims:

- To introduce students to some of the mathematical assumptions and analyses that underlie economic intuitions in strategic situations and which are typically used in order to derive economic properties of equilibrium ideas in a rigorous fashion

Objectives:

On completing the module a student will be able to:

- Have acquired a small set of analytical methods of argument and proof
- Have developed problem solving skills in formally stated economic problems
- Appreciate the links between economic theory and formal mathematical analysis
- Have acquired a set of analytical methods, and practice and skill in using them in problem solving; and an appreciation of how the economic theory works in these areas

Assessment:

- **Procedural:** Through seminars and problem sets for these seminars. In advance of each seminar you should have looked at the seminar questions, and prepared your answer to them. Your tutor will expect you to be able to participate in analysing and discussing these questions. The precise format of seminars may vary. Your tutor will give you further guidance on this.
- **Final:** There will be a 3-hour unseen examination in the Summer Term.

Pre-requisites:

- Probability 1 (ECO00011C) or Introduction to Probability and Statistics (MAT00004C)
- Economics 2 – Microeconomics (ECO00025I) or Microeconomics 2 (ECO00001I)
- Economics 2 – Macroeconomics (ECO00026I) or Macroeconomics 2 (ECO00002I)

If a student does not like proving results by analytical arguments using the language of Mathematics (as opposed to merely loose verbal reasoning) then s/he may not feel comfortable with this module.

Page last updated: 07 September 2018
Main References:

In the Autumn term, we use the following textbook:


We cover parts I and II of the book in the Autumn term.

For the Spring term, we use the following textbook:


There will also be some supplementary materials and papers.