Course Outline 2017

ECON 212: GAME THEORY (15 POINTS)

Semester 1 (1173)

Course Prescription

An introduction to the fundamental concepts of non-cooperative and cooperative game theory: the concept of strategy; two person constant sum non-cooperative games and the minmax value; n-person non-cooperative games and Nash equilibrium; examples and applications in auctions, bargaining and other economic models, political science and other fields; the idea of backward induction and sub-game perfection; introduction to games in coalitional form; the core and the Shapley value.

Programme and Course Advice

Prerequisites: ECON 101 Microeconomics *or* ECON 191 Business Economics *or* MATHS 108 General Mathematics 1 *or* MATHS 150 Advancing Mathematics 1 *or* MATHS 153 Accelerated Mathematics *or* PHIL 101 Introduction to Logic.

Goals of the Course

Students will be introduced to the basic concepts and taught to analyse simple examples. Emphasis will be very much on basic understanding rather than formal statements of results. Some formal definitions will be examined, but only after a thorough examination of the concepts in the context of examples.

Learning Outcomes

By the end of this course it is expected that the student will be able to:
1.	understand the basic issues;
2.	explain how to recognise strategic situations and represent them as games;
3.	solve simple games using various techniques;
4.	analyse various economic situations using game theoretic techniques;
5.	understand, through a basic introduction, the more formal aspects of the theory.

Content Outline

Week 1:	Historical Introduction
Week 2:	Basic Concepts, and Terminology
Week 3:	Normal Form Games
Week 4:	Zero-sum Games and the Minmax Value
Week 5:	Equilibrium
Week 6:	Extensive Form Games
Week 7:	Information Sets and Perfect Information

Content Outline continued

Week 8:   Perfect Recall
Week 9:   Backward Induction and Subgame Perfect Equilibrium
Week 10:   Coalitional Games
Week 11:   Core
Week 12:   Shapley Value

Learning and Teaching

This course will be taught in the first semester. There will be 3 hours of lectures per week.

Teaching Staff

Associate Professor John Hillas

Office: OGGB 6111

Tel: 923 7349

Email: j.hillas@auckland.ac.nz

Learning Resources

There is no prescribed text for this course but comprehensive notes on the material will be provided in a Coursebook and electronically on the Class web page. For students who would like a text to accompany the course, the following is recommended:

Recommended Text:

Avinash Dixit and Susan Skeath, *Games of Strategy*, W.W. Norton and Company, 2004. (2000 version is also useable.)

Assessment

Coursework: 40% of final grade (3 Assignments worth 5% each, one Test worth 25%).
Final Examination: 60% of final grade.

Plussage does *NOT* apply.

The Assignments will be given regularly throughout the course and will give students an opportunity to practice what they have recently learned, and in particular applying theoretical concepts to solve practical problems.

Mid Semester Test Date	
Semester 1 - Week 7	TBA

The Test will cover the material taught before the break. More details will be provided at lectures and on CANVAS.

More details about what is required for each part of the assessment will be announced in class at the appropriate time. The final exam will cover all aspects of the course and will test students' knowledge of the theory and examples that were covered in the course.

Learning Outcome	Test	Assignments 1 – 3	Final Examination
1	X	X	X
2	X	X	X
3	X	X	X
4	X	X	X
5	X	X	X