THE UNIVERSITY OF THE WEST INDIES, MONA

# ECON6050: Game Theory II

Semester 2, 2018-19
Pre-requisites: ECON6004, ECON6046, ECON2017, or permission of Lecturer
Lecturer: Peter-John Gordon

Lectures: W 1:00 pm – 2:00 pm GLT1; Th 12:00 noon – 2:00 pm GLT1
Office Hours: M 9:00 – 11:00 am, W 10:00 am – 12:00 noon*

## Description

Game theory has found many applications in various field, such as economics, biology, law, politics, sociology and computer science. This course is the second in the Game Theory sequence. It builds on the skills learned in ECON6046 – Game Theory I by applying the solution concepts to more complicated games. This course focuses of games of incomplete information, e.g. moral hazard, adverse selection, mechanism design and signaling.

## Learning Outcomes.

Upon successful completion of the course, the student should be able to:
- Use the principal-agent framework to model a number of different situations
- Be able to construct participation, incentive compatibility and competition constraints.
- Be able to design optimal contracts
- Understand how the possibility of renegotiation affects contracts.
- Account for heterogeneous tastes in adverse selection models
- Use mechanism design to uncover hidden information
- Design games of signaling and screening
- Use auctions to uncover hidden information

## Modes of Delivery

Three hours of lectures per week. Some of these lecture hours will be used for problem solving sessions.

## Assessment

A mid-semester exam (40%) and a final exam (60%). Material covered on the mid-semester will not be re-examined on the final.

## Syllabus

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| 1. | Moral Hazard: Hidden Actions | Ch. 7 |
| 2. | Further Topics in Moral Hazard | Ch. 8 |
| 3. | Adverse Selection | Ch. 9 |
| 4. | Mechanism Design and Postcontractual Hidden Knowledge | Ch. 10 |
| 5. | Signalling | Ch. 11 |
| 6. | Auctions | Ch. 13 |

Chapters indicated are from Rasumusen.
Additional Topics and/or References may be given during the course of the class.

# Resources

## Prescribed

- Rasmusen, Eric, 2007. *Games and Information: An Introduction to Game Theory,* 4th ed., Blackwell Publishing, Princeton University Press.

  I will follow this text very closely.  However students might want to consult other texts, some of which are listed below.

## Recommended

- Gibbons, Robert, 1992. *Game Theory for Applied Economists.* Princeton: Princeton University Press.
  This text is comparable to Rasmusen in its rigor and intuition.
- Fudenberg, David and Jean Tirole. 1991. *Game Theory.* Cambridge: MIT Press
  This is the most comprehensive survey of Game Theory available.  It makes substantial demands on analytical and mathematical skills.
- Osborne, Martin and Ariel Rubinstein. 1994. *A Course in Game Theroy.* Cambridge: MIT Press
  More analytically demanding than Rasmusen.
- Myerson, Roger. 1991. *Game Theory: analysis of Conflict.* Cambridge: Harvard University Press.
  Mathematically very demanding. Provides the most  nuanced treatment of the subject of all the text listed.


In order to maximize the benefit for this course, students should see the problem sets as learning tools to be taken seriously.  Every attempt should be made to work these problems, first individually, then collectively, **before** solutions are provided in class.


*Persons who find it impossible to see me doing these times can make an appointment for a consultation at a mutually convenient time.