

# UNIVERSITY OF CAMBRIDGE

## ECONOMICS TRIPOS PART IIA Paper 1 – Microeconomics Game Theory and Industrial Organisation

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Lectures: Monday & Friday 10am–11am  
Office Hours: Monday 3-4pm

### Description

Optimal decisions of economic agents depend on expectations of other agents' actions. Game theory is a set of analytical tools designed to help us understand behaviour in multi-person decision settings. This eight-hour course examines various models of equilibrium behaviour in both static and dynamic games. Besides introducing the theoretical concepts, we should analyse a wide range of applications. Particular attention will be devoted to the analysis of the behaviour of firms competing in the market.

### Textbooks

Main texts:

R. Gibbons, “*A Primer in Game Theory*”, Pearson. (henceforth **G**)

M. Osborne, “*An Introduction to Game Theory*”, Oxford. (**O**)

Textbooks in Industrial Organisation:

L. Cabral, “*Introduction to Industrial Organization*”, MIT Press.

S. Martin, “*Advanced Industrial Economics*”, Blackwell.

General microeconomics textbooks that include some sections on Game Theory and Industrial Organisation:

Jehle, G and P. Reny, “*Advanced Microeconomic Theory*”, Addison Wesley.

Varian, H, “*Intermediate Microeconomics*”, Norton & Company.

## **Course Outline**

There are five chapters. A brief guide follows, with contents and suggested readings from the main texts mentioned above.

1. **Introduction**

Monopoly pricing. Motivation. More examples.

G: Chapters 1.1.A. O: Chapters 1 and 2.

2. **Simultaneous-move games: Theory**

Nash equilibrium. Dominant and dominated strategies. Mixed strategy Nash equilibrium.

G: Chapter 1. O: Chapter 4.

3. **Simultaneous-move games: Applications**

Bertrand and Cournot competition. More applications.

G: Chapter 1.2. O: Chapter 3.

4. **Dynamic games of complete information**

Strategy. Extensive form representation. Subgame perfect equilibrium. Application: Stackelberg model of competition.

G: Chapter 2. O: Chapters 5-7.

5. **Repeated Games**

Repeated games. Application: collusion.

G: Chapter 2.3. O: Chapters 14-15.