

COMPETITIVE STRATEGY AND GAME THEORY (MG205)

Course duration: 54 hours lecture and class time (Over three weeks)

LSE Teaching Department: Department of Management

Lead Faculty: Dr Kristof Madarasz and Dr Vikram Pathania

Pre-requisites: A university level course in business, management, psychology or economics. Knowledge of some statistics, (mean, standard deviation) and economics (utility maximization, monopoly pricing) are recommended

Course Outline:

The course intends to raise students to an advanced intermediate level (B.Sc final year). However, all new concepts will be introduced and explored in lectures and classes; so no previous knowledge except some 'introductory' level knowledge in economics and mathematics are required.

Prerequisites:

Knowledge of elementary probability theory, (mean, standard deviation, and basic maximization problem in calculus) plus some introductory economics (marginal costs, fixed and variable costs, monopoly) are recommended. The second chapter in Cabral "Introduction to Industrial Organization" is a good example of the level of economics students are expected to understand.

1

Course Description and Objectives:

This course is an introduction to strategic thinking applied to managerial situations. By drawing simultaneously on the language and tools of game theory, economics, psychology and management, a coherent and logical framework is developed to help analyse reasonably complex business situations. It will be a mixture of theory and applications. The fundamental viewpoint is one which focuses on the strategic interactions between different parties. At the end of the course participants should have developed skills in the analytical and systematic use of strategic concepts and methods. The course provides a valuable complement to basic courses in business and corporate strategy and a less technical treatment of tools originating from industrial organisation and game theory.

The focus is not so much on buzzwords and strategic recipes - the business world is too complex and we do not want to take the very high risk of drawing ready made solutions to every conceivable business situation without thinking about the possible pitfalls. Fortunately, quite a lot can be said about good strategies without requiring a recipe book - research over the last twenty years provides us with a good scientific basis with which we can often make a judicious selection.

Aims of the Course:

1. To provide a way of thinking about strategic interactions in real life and in business situations.
2. To provide a formal, analytical framework through game theory to study aspects of co-operation, co-ordination, differentiation and negotiation.
3. Adapt the above framework and incorporate other basic economic and behavioural insights to evaluate good business decisions.
4. A clear analytical way of thinking about how firms could create, sustain and appropriate value.
5. To use cases and other real life examples to illustrate the usefulness and complexities of applying theories.

Teaching and Learning:

The format of this course is a combination of lectures, case discussions, exercises, experiments and readings. We will employ the following teaching methods:

- a) Readings from textbooks: To provide a language and structure, concepts and techniques.
- b) Readings from journals: To amplify the textbooks and provide more intellectual foundations of the field.
- c) Lectures/Classes/Discussions: To create a coherent framework of studying the source material; to give you a chance to ask questions and clarify your understanding.
- d) Case studies and experiments: To apply what you have been learning to real life situations.
- e) Exercises: To ensure that you understand the concepts.

2

Course Structure:

12 teaching days, 2 examination days

12 three hour lecture sessions; 12 90 minute class sessions

Active student participation is essential in the classes. In the classes, the lecturer will introduce the topic/case/experiment/exercise and lead the discussion. Students are encouraged to present pre-assigned material and lead part of the discussion in the class group. Pre-assigned reading of cases and exercises is essential.

COURSE CONTENT

Lecture 1: Introduction to Game Theory, Part 1.

- What is Game Theory? Two-player games. Some examples of static games, Dominant Strategies, Nash equilibrium, K-level thinking, Beauty Contests.

Lecture 2: Introduction to Game Theory, Part 2.

- Games of Conflict and Cooperation. Two-person Bargaining. Common Knowledge and Strategic Reasoning. Backward induction. Sub-game perfection.

Lecture 3: Models of Competition

- Perfect competition and monopoly. Price (or Bertrand) competition. The Bertrand paradox. Quantity (or Cournot) competition. Tacit and overt collusion. Collusion-facilitating practices.

Lecture 4: Fairness and Bargaining, Experiments in Strategic Interaction

- Bargaining Games. Trust and Punishment. Fairness, Reciprocity. Psychological Biases, Overconfidence.

3

Lecture 5: Strategic Communication, and Persuasion.

- Credibility, Advertising, Sophisticated and Naive Consumers, Add-on Pricing Strategies.

Lecture 6: Dynamic Strategies, Long-term Interactions

- Dynamic Games, Sustaining Cooperation. Reputation Building, Cartel Building, Price Wars.

Lecture 7: Describing and Analysing Market Structure: Why the Big get Bigger.

- Describing market structure. C4-ratio. Herfindahl index. Determinants of market structure. Market Power. Sources of Economies of Scale. Learning or experience curve.

Lecture 8: Entry and Entry Deterrence. Vertical Relations.

- Structural determinants: Barriers to entry and barriers to exit. Where do potential entrants come from. Strategic entry deterrence: Tactics and tradeoffs. Vertical Integration. Relation-Specific Assets and Hold-Up.

Lecture 9: Research and Development.

- Market structure and R&D intensity. R&D rivalry. Monopolists' and entrants' R&D incentives. Risk choice of R&D. Benefits of the patent system. Spillovers.

Lecture 10: Technology Adoption.

- Preemption games. Option value and future technological generations. First- and second-mover advantages, Technology diffusion.

Lecture 11: Strategies for the Information Economy

- Strategies for Information goods. Network Effects and Two-sided platforms. Winner-takes-it-all markets.

Lecture 12: Market Design (for E-commerce).

- Standard auction formats, market design to increase market power, winner's curse, E-commerce applications.

Required Course Material:

4

The main reading for this course will be provided in the coursepack. In the second part of the course we will be drawing on Cabral's "Introduction to Industrial Organization" quite heavily. A good introduction and supplementary reading is Dixit and Nalebuff's "Thinking Strategically". Interested students might additionally read the books by Kay and Brandenburger and Nalebuff listed below.

- 'Thinking Strategically' by Avinash Dixit and Barry Nalebuff, W.W. Norton and Co. 1993.
- 'Introduction to Industrial Organization' by LMB Cabral, MIT Press, 2000.
- 'Foundations of Corporate Success' by John Kay, Oxford University Press 1995.
- 'Co-opetition' by A. Brandenburger and B. Nalebuff, Harper Collins Publishers 1996.

Other books which might be useful are:

- 'A Primer in Game Theory' by Robert Gibbons, published by Harvester Wheatsheaf, 1992.
- 'Games of Strategy' by Avinash Dixit and Susan Skeath, W.W. Norton & Company 2014.
- 'Information Rules' by Carl Shapiro and Hal Varian, Harvard Business School Press, 1999.
- 'The Economics of E-Commerce' by Nir Vulkan

References of journal articles are provided in the lectures

Assessment: By two written examinations (worth 50% each).

Credit Transfer: If you are hoping to earn credit by taking this course, please ensure that you confirm it is eligible for credit transfer well in advance of the start date. Please discuss this directly with your home institution or Study Abroad Advisor.

As a guide, our LSE Summer School courses are typically eligible for three credits within the US system and 7.5 ECTS in Europe. Different institutions and countries can, and will, vary. You will receive a digital transcript and a printed certificate following your successful completion of the course in order to make arrangements for transfer of credit.

If you have any queries, please direct them to summer.school@lse.ac.uk