

**Centre for International Trade and Development
School of International Studies**

Course : MA in Economics (with specialization in World Economy)

Course Title: Microeconomics II

Course Number: IE 405

Course Type: Core

Course Teacher: Professor Sangeeta Bansal

Credits: 4

Contact Hours: 4 hours per week

Course Objectives:

This course is designed to introduce students to some of the advanced topics in microeconomic theory including choice under uncertainty, non-cooperative game theory, industrial organization and asymmetry of information. Game theory is the study of multiagent decision problem that models strategic interaction amongst economic agents. The course covers game theoretic models and their economic applications. The module on industrial organization focuses upon the theory of firm under various market structures. It applies the concepts covered under game theory to model strategic behaviour of firms in price and non-price competition. The module on asymmetry of information introduces students to economic inefficiency caused when information is asymmetrically held by market participants.

Learning outcomes: Students will acquire a sound theoretical background in microeconomic theory. Students will be equipped to analyze economic problems from a game theoretic perspective and apply game theoretic models to solve them. Students will learn various strategies that firms can engage in such as price or quantity competition, product differentiation, advertising, research and development, etc. Students will understand the effect of these strategies on profits, consumer welfare, and economic welfare under different market structures. The students will also learn inefficiencies caused by asymmetry of information and how to mitigate them. The students will be prepared to do advanced research in the area of micro economics.

Evaluation Methods: A mid-semester exam, an end-semester exam, and class participation.

Course Content

I Choice Under Uncertainty

Expected Utility Theorem

Monetary Lottery and Risk Aversion

Arrow Pratt Measure of Absolute and Relative Risk Aversion

Applications: Insurance and portfolio choice

Comparing risk: First order and second order stochastic dominance
(Jehle and Reny; Mas-Colell, Whinston and Green)

II Non-Cooperative Game Theory

Representation of a game: normal form, extensive form

Static games of complete information

Prediction of an outcome:

Dominant strategies; Iterated elimination of dominant strategies;

Nash equilibrium: pure strategies, mixed strategies, existence

Dynamic games of complete information

Backward induction and subgame perfect equilibrium

Sequential bargaining - Rubinstein model

Repeated games: finite and infinite

Static games of incomplete information: Bayesian games and Bayesian Nash equilibrium

(Jehle and Reny; Mas-Colell, Whinston and Green; Gibbons; Tadelis; Osborne)

III Industrial Organization

Monopoly: Pricing and quantity; Deadweight loss; non-linear pricing; two part tariff, Price discrimination, discriminating monopoly, screening, perfect discrimination, natural monopoly, Ramsey pricing; contestable markets; multi-product monopoly, multi plant monopoly, durable good monopoly, Lerner index, quality distortion

Duopoly: Bertrand games, Cournot analysis

Entry, accommodation and exit: No. of firms endogenous; Bain Sylos Postulate, entry deterrence, Dixit Spence model, limit pricing

Monopolistic competition

Markets for differentiated Goods

Product differentiation and product selection

Location strategies: Hotelling's linear city model

Horizontal product differentiation

Vertical product differentiation

Network externalities

Recent advances in IO theory

(Tirole; Mas-Colell, Whinston and Green; Oz Shy; Belleflamme et al.)

IV Asymmetry of Information

Principal agent models; Adverse selection; Moral hazard; Signalling

Mas-Colell, Whinston and Green; Kreps; Jehle and Reny

Suggested Readings

Jehle and Reny, Advanced Micro-economic Theory

Gibbons, R (1992), A Primer in Game Theory.

Mas-Colell, Whinston and Green (1995), Microeconomic Theory, The MIT Press.

Tadelis, S. (2013). Game Theory: An Introduction

Kreps, D (1990) A Course in Microeconomic Theory, Princeton University Press.

Dixit and Skeath (2004), Games of Strategy, Norton and Company.

Osborne and Rubinstein (1994), A course in Game Theory, The MIT Press.

Osborne (2003), An introduction to Game Theory, Oxford University Press.

Tirole (1988), Industrial Organization, The MIT Press.

Oz Shy (1996), Industrial Organization, The MIT Press.

Belleflamme, Paul and Martin Peitz (2010), Industrial Organization Markets and Strategies, Cambridge University Press.