

### Overview and Objectives

The course aims at providing students with the basic tools of Game Theory and Microeconomic Analysis, while bearing in mind the main objectives of the MCR and EPP programs. Applications to these areas will be given to illustrate the predictive power of these tools, with the final objective of making policy recommendations.

### Course Outline

1. **Game theory: simultaneous-move games.** Best response, dominant strategies, rationalizable strategies, Nash equilibrium. Applications: oligopoly, auctions, electoral competition, provision of public goods.
2. **Game Theory: dynamic games.** Backward induction, subgame perfection. Applications: price leadership, entry deterrence, rules versus discretion in economic policy.
3. **Game Theory: topics.** Repeated games, incomplete information, bounded rationality, social behavior. Applications: collusion, bargaining.
4. **Consumer theory:** Preferences, budget constraints, choice, utility maximization, demand functions, inverse demand functions, aggregate demand, elasticity.
5. **Externalities and public goods** and the need of market intervention
6. **Applications of consumer theory:** Decision theory under uncertainty: Risk aversion and insurance; Endowment effects: the labor-leisure decision.
7. **Producer theory:** Technology, production functions, cost minimization, cost functions, returns to scale, long and short-run cost functions.
8. **Profit maximization and equilibrium in perfectly competitive markets:** a firm's supply and aggregate supply, short-run and long-run market equilibrium.
9. **Welfare analysis:** Consumer and producer surplus, taxes and subsidies.
10. **Adverse Selection:** Akerlof's model, screening, signaling. Applications: insurance and labor markets, monopoly regulation.
11. **Moral hazard.** Principal-agent problem, dynamic considerations. Applications: credit, labor, insurance markets.

### Required Activities

Problem sets will be distributed regularly. Some selected problems will be graded. Solutions for all problems will be published in the intranet.

### Evaluation

Problem sets (20%) and a Final Examination (80%)

### Materials

#### Units 1-3

Harrington, J. (2009), *Games, Strategies and Decision Making*. Worth Publishers.

Watson, J. (2013), *Strategy: An Introduction to Game Theory*. Norton. 3th edition.

#### Units 4-9

Varian, Hal, *Microeconomic Analysis*, Norton

Mas-Colell-Whinston-Green, *Microeconomic Theory*, Oxford University Press

#### Units 10-11

Macho-Stadler, I. and D. Perez-Castrillo (2005), *An Introduction to the Economics of Information*. Oxford University Press, 2<sup>nd</sup> edition.