Universidad Carlos III de Madrid

Master in Economic Analysis

Microeconomics II

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1 Summary of the Course

Microeconomic theory is a set of consistent assumptions that aim to provide a systematic and realistic model of decision making for economic agents, and to use this framework to analyze socio-economic situations such as decision under fundamental and strategic uncertainty, markets, bargaining, oligopolistic competitions, or collective decision problems. The course Microeconomic 2 introduces the fundamental tools that are needed for the analysis of strategic situations. By strategic situations, we mean economic environments in which the optimal decision for one agent depend on what she expects other agents will do.

2 Prerequisites

A background in Microeconomics is necessary. On top of that, the student needs to have an appreciation for mathematical modeling in the social sciences.

3 Course Organization and Timeline

This course is a thirteen week course, with two lectures of 1h30 and one practical class of 1h30 per week. On top of these thirteen weeks of courses, around the middle of the semester, there is one week (around the middle of the semester) without classes during which the midterm exam takes place, and an additional week (the second week after the last week of class) in which the final exam takes place. I detail below the list of topics that we shall cover during each week.

1. Decision under uncertainty (week 1)

2. Market failures and externalities (week 2 to 4)

    (a) Unilateral externalities

    (b) Multilateral externalities

    (c) Solutions to the externality problems:

        i. The Coase theorem

        ii. Quotas

      iii. Pigouvian Taxes

   (d) Public goods and the neutrality theorem

3. Static Games of Complete Information (week 5 to 8)

   (a) Definition and normal form representation of static games

   (b) Solution concepts for static games: dominant strategies, weakly dominant strategies, rationalizable strategies, and Nash equilibrium.

   (c) Applications of static game theory:

      i. Oligopolistic competition and market power: Cournot competition, Betrand competition

      ii. Competitive biddings in auctions

      iii. Strategic models of politics: Downsian electoral competition, voting games

   (d) Supermodular games and their applications

4. Dynamic Games of Complete Information (week 9 to 11)

   (a) Definition and extensive form representation of dynamic games

   (b) Solution concepts for dynamic games of perfect information: sequential rationality

   (c) Applications of dynamic game theory with perfect information:

      i. Oligopolistic competition and market power: strategic entry, Stackelberg competition, sequential price competition

      ii. Bilateral bargaining: the Rubinstein model of alternating offers

   (d) Solution concepts for dynamic games of imperfect information: subgame perfect Nash equilibrium.

   (e) Applications of dynamic game theory with imperfect information:

      i. Models of war of attrition.

      ii. Sequential voting procedures with amendments

      iii. Multistage games, repeated games, and self enforcing cooperation.

5. Static games of incomplete information (week 12 and 13)

(a) Definition and representation of static games of incomplete information: the Harsanyi representation

(b) Solution concepts for games with incomplete information: Bayesian Nash equilibrium

(c) Applications.

   i. Oligopolistic competition: strategic entry with asymmetric information

   ii. Competitive biddings in auctions with private information

   iii. Bargaining with asymmetric information and the lemon problem

4 Faculty

- Lecturer: Antoine LOEPER

- Room: 15.2.17

- Email: aloeper@eco.ecu3m.es

- Phone: 916 24 5738

- Office hours: TBA

- Teaching Assistant: TBA

5 Lectures

Tuesday, Wednesday and Friday from 10h45 to 12h15

6 Grading

The final grade will be based on a midterm (about 30%) and a final exam (about 60%), and weekly homework (10%).

7   Bibliography

The textbook for the course is "Introduction to Game Theory" by Steven tadelis, and "Microeconomic Theory" by Mas-Colell et al. (1995).