

Microeconomics Syllabus

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Outline: This course (and the next one on the series, *Uncertainty and Information*) exposes students to a formalized treatment of microeconomic theory at an advanced level. Methodologically it focuses only in situations of complete information, and leaves the study of uncertainty for the next course.

Evaluation Criteria: The final course grade is a weighted average of the final exam (60%), the sandbox exercises (20%), and the problem sets (20%). The sandbox exercise is a open answer group exercise that you will develop along the course. Regarding the problem sets, every week there are some exercises that you have to hand in. I will (randomly) grade some of them. In terms of problem set grading, effort counts 60%, and performance (whether exercises are correctly solved) 40%.

General References

- A. Mas-Colell, M. Whinston and J. Green (1995), *Microeconomic Theory*, Oxford University Press. (MWG)
- D. Kreps (1991), *A Course in Microeconomic Theory*, Harvester Wheatsheaf.
- H. Varian (1992), *Microeconomic Analysis*, 3rd edition, W. W. Norton and Company.

GAME THEORY

- R. Gibbons (1992), *A Primer in Game Theory*, Harvester Wheatsheaf. (also available in Spanish).
- M. Osborne (2004), *An Introduction to Game Theory*, ch. 1-7.
- K. Binmore (1991), *Fun and Games*, D.C. Heath.
- D. Fudenberg and J. Tirole (1991), *Game Theory*, MIT Press, ch 1-5.

1 Consumer Choice and Demand Theory (2.5 weeks)

1. Objects of choice, Constraints and Preferences.
2. Utility Maximization: Walrasian Demand and the Indirect Utility Function.
3. Expenditure Minimization: Hicksian Demand and the Expenditure Function.
4. Main Results. Duality.

References

- MWG 1.B, 2.B-D, and 3.A-H.
- A. Deaton and J. Muellbauer (1980), *Economics and Consumer Behaviour*, Cambridge University Press, ch. 1 and 2.
- J. Green and W.P. Heller (1981), "Mathematical Analysis and Convexity with Applications to Economics", *Handbook of Mathematical Economics*, ch. 1.

2 Other Demand Topics (1.5 weeks)

1. Excess Demand Functions.
2. Intertemporal Choice: Consumption, Saving and Interests Rates.
3. Composite Good Theorem.
4. The neoclassical model of labour supply.
5. Compensating Variation, Equivalent Variation and Consumer Surplus.
6. Aggregated Demand Theory.

References

- A. Deaton and J. Muellbauer op. cit., ch. 4, 5, 6, 7, 8, 12.
- MWG 3.I and 4.A,B and D.
- G. Becker (1993), "Nobel Lecture: The Economic Way of Looking at Behavior", *Journal of Political Economy*, pg. 385-409.

3 Production Theory (1 week)

1. Objects of choice, Constraints and Preferences.
2. Profit Maximization: Supply Correspondence and Profit Function.
3. Cost Minimization: Conditional Factor Demand Correspondence and Cost Function.
4. Production Aggregation.
5. What is a Firm?

References

- MWG 5.A, B, C, D, E and G.

- D. Kreps op. cit., ch. 7 and 19.
- R. H. Coase (1937) “The nature of the firm,” *Economica N. S.* Reprinted by Williamson and Sidney; “The nature of the firm: Origins, evolution, and development.” Oxford University Press, 1991, pages 18-33.

4 General Equilibrium Theory and the Fundamental Theorems of Welfare Economics (2 weeks)

1. Definitions. Pareto Efficiency and Competitive Equilibrium Concepts.
2. Pure Exchange Economy: Edgeworth Box..
3. Competitive Equilibrium Existence.
4. First and Second Fundamental Theorems of Welfare Economics.

References

- MWG 15.B and C; MWG.16.A-D and G; and 17.A-C, E and F.
- G. Debreu (1959), *The Theory of Value*, Antoni Bosch.
- K. Arrow and F. Hahn (1971), *General Competitive Analysis*. Holden Day.

5 Static Games of Complete Information (1 week)

1. Introduction and Definitions.
2. Solution Concepts. Nash Equilibrium.
3. Existence of a Nash Equilibrium.
4. Applications.

References

- Gibbons ch. 1.
- MWG 8.A,B,D. Read 8.C and 8.F
- Osborne ch. 2-4.
- Fudenberg and Tirole ch. 1 and 2 (pretty advanced for us).

6 Dynamic Games of Complete Information (2 weeks)

1. Extended Form Games.
2. Subgame Perfect Equilibrium.
3. Repeated Games: Basic Results and Applications.

References

- Gibbons ch. 2.
- MWG 7.C, 9.B.
- Osborne ch. 5-7.
- Fudenberg and Tirole cap. 3,4 and 5 (advanced).
- Greif, Milgrom and Weingast (1994) "Commitment and Enforcement. The case of the Merchant Guild," *Journal of Political Economy*.