

**Universidad Carlos III**  
**Microeconomics III**  
**2016-2017**  
**Ph.D. in Economics**

## **Part I: Information Economics**

1. Trading and contracting with common values
  - (a) Adverse selection in markets: Akerlof's model
  - (b) Competitive screening
2. Games of incomplete information
  - (a) Static games
  - (b) Dynamic games
  - (c) Signaling games
  - (d) Reputation
3. Optimal contracting with hidden actions
  - (a) The basic 2x2 model
  - (b) The trade-off between insurance and incentives when actions are non-observable
  - (c) Multiple outcome model
  - (d) The general model

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### **Main references**

The main reference for the class is Mas-Colell, Whinston and Green, *Microeconomic Theory*, Oxford, University Press. Other useful sources are Kreps, *A Course in Microeconomic Theory*, Princeton University Press; Fudenberg and Tirole, *Game Theory*, The MIT Press; Salani, *The Economics of Contracts*, The MIT Press; Laffont and Martimort, *The Theory of Incentives*, Princeton University Press; Bolton and Dewatripont, *Contract Theory*, The MIT Press. This material is useful in preparing for homework and final exam. I do not list additional readings for the “interested reader” as these are provided in most of the texts which are listed below. Please, feel free to ask me for additional material.

## Part II: Mechanism Design

1. Introduction.
2. Basic Examples of Bayesian Mechanism Design with Transferable Utility:
  - (a) The Monopoly in the unit-demand case: revelation and taxation principles.
  - (b) Auctions.
  - (c) Public goods.
  - (d) Bilateral trade.
3. Basic Examples of Dominant Strategy Mechanisms.
  - Auctions and VCG auctions.
4. Informational Interdependence (Common Values).
5. Robust Mechanism Design.
6. Non-Transferable Utility.
7. Dynamic Mechanism Design.
8. (Lack of) Commitment.
9. Multiple Principals.

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### Main Reference

- Tilman Börgers, Daniel Krähmer, and Roland Strausz, *An Introduction to the Theory of Mechanism Design*, USA: Oxford University Press, 2015.

### Other References

- Leonid Hurwicz and Stanley Reiter, *Designing Economic Mechanisms*, Cambridge: Cambridge University Press, 2006.
- Steven R. Williams, *Communication in Mechanism Design: A Differential Approach*, Cambridge: Cambridge University Press, 2008.
- Dimitrios Diamantaras, with Emina I. Cardamone, Karen A. Campbell, Scott Deacle, and Lisa A. Delgado, *A Toolbox for Economic Design*, New York: Palgrave MacMillan, 2009.

- Rakesh Vohra, Mechanism Design, *A Linear Programming Approach*, Cambridge: Cambridge University Press, 2011.
- Noam Nisan, Tim Roughgarden, Eva Tardos, and Vijay V. Vazirani, *Algorithmic Game Theory*, Cambridge: Cambridge University Press, 2007.
- Alvin E. Roth, *What have we learned from market design?*, Economic Journal 118 (2008).
- Nir Vulkan, Alvin E. Roth, and Zvika Neeman, editors, *The Handbook of Market Design*, Oxford: Oxford University Press, 2013.

More references will be provided along the course for particular topics.

## **Evaluation**

The final grade is computed as a weighted average: 40% the grade in the continuous evaluation and 60% the grade of the final exam. The grade in the continuous evaluation is computed based on the solutions to the problem sets. In order to pass, a minimum of three out of ten is required in each of the two parts of the course.