

## Mechanism Design and Social Choice - Winter Term 2015 Preliminary Syllabus

This course introduces students to the ideas and concepts of social choice and mechanism design theory.

**Prerequisites:** Knowledge of topics covered in the basic master module Microeconomics will be assumed.

**Lectures:** Tuesday and Thursday 12-14 in Hörsaal F

**Grading:** Grades will be based solely on performance in one final exam (closed book).

**Course outline:** We plan to cover the following topics.

Part I: Social Choice Theory (Albin) – 7 lectures

- Social welfare functions
  - Arrow’s impossibility theorem
  - Restricted environments (May’s Theorem, Median Voter Theorem)
- Social Choice functions
  - The Gibbard-Satterthwaite Theorem
  - Connection to Arrow’s Theorem
  - Restricted environments, e.g., single-peaked preferences

Part II: Mechanism Design Theory (Cédric) – 14 lectures

- Implementation in dominant strategies / in Bayesian Nash equilibrium
- The Revelation Principle
- Quasi-linear environments
  - Efficiency: Vickrey-Clarke-Groves mechanisms
  - Efficiency and Budget Balance: Expected externality mechanism
  - Characterization of Bayesian incentive compatibility
  - Participation constraints
- Optimal auctions
- Bilateral trade and the Myerson-Satterthwaite Theorem

Part III: Matching and multi-object auctions (Albin) – 7 lectures

- Matching (without money), e.g., school choice and house allocation
- Matching with money and multi-object auctions