

Mechanism Design and Collective decision making

Antonio Nicolò
antonio.nicolo@unipd.it

This course introduces students to mechanism design theory, which looks at the design of institutions and studies how these affect the outcomes of social interactions, assuming that the individuals interacting through the institution will act strategically and may hold private information that is relevant to the decision at hand. The course begins by providing some basic tools and general results of implementation. In the last part of the course we will look at matching markets, in particular the use of centralized market mechanisms to assign students to schools, workers to jobs, kidneys to transplant patients and so forth.

Lecture 1 Introduction to mechanisms and market design

PART 1 MECHANISM DESIGN

Lecture 2 Dominant Strategy Mechanism Design

Lecture 3 The Gibbard-Satterthwaite Theorem: impossibility results

Lecture 4 Single Peaked-Preferences and Other Restricted Domains

Lecture 5 Quasi linear preference domain: Groves' Schemes and The Pivotal Mechanism and Vickrey Auctions

Lecture 6 Separable Preferences: voting by committees

Lecture 7 Information and preference aggregation

PART 2 MARKET DESIGN

Lecture 8 Introduction to Matching Theory

Lecture 9 Two-Sided Matching and Medical Residents

Lecture 10 One-Sided Matching: House Allocation and Kidney Exchange

Evaluation

Written final exam