ECON 448: Economics of Information
Bilkent University
Fall 2024

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Lectures: Mondays 15:30-17:20 (A-330), Thursdays 11:30-12:20 (A-330)
Office Hours: Mondays 14:00-15:00 or by appointment

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Office Hours: Tuesdays 15:00-16:00

Course Description and Objectives

In this course, we will study economic interactions where *information* plays a significant role. We will start with **statistical decision theory**, where we gain insights into single-agent decision problems under uncertainty. We will then cover interactions with asymmetric information; namely, **moral hazard**, **adverse selection**, and **mechanism design**. Finally, if time permits, we will cover **strategic communication**: signaling, cheap talk, and Bayesian persuasion.

Prerequisites

To be able to follow the material, knowledge of game theory (Econ 204 or Econ 207) is required.

Logistics

We will be utilizing Moodle very thoroughly throughout the semester: the resources/readings will be posted there and all communications will be handled through Moodle. Please join the Moodle page and make sure you can receive the announcements: `https://moodle.bilkent.edu.tr/2024-2025-fall/course/view.php?id=893`

Resources

I will attempt my best to post lecture notes regularly to Moodle. Here are some additional materials you may want to check out:

- Bengt Holmström's 14.124 Lecture Notes at MIT. Available at: `https://ocw.mit.edu/courses/14-124-microeconomic-theory-iv-spring-2017/`

- Lars Stole's Lecture Notes. Available at: `https://ocw.mit.edu/courses/14-124-microeconomic-theory-iv-pages/lecture-notes/`

- Anne Liang's Lecture Notes. Available at: `https://www.anniehliang.com/lecture-notes`

- Hart, Oliver. *Firms, Contracts, and Financial Structure.* Clarendon Press, 1995.

- Krishna, Vijay. *Auction Theory.* Academic Press, 2009.

Grading

Participation: I will not be taking attendance, but I expect everyone to participate in the lectures. Participation is an essential part of this course, and it is crucial to have a satisfying learning experience. Also, a reminder that *participation* is not the same thing as *attendance*: I expect you to show up in class *and* answer questions, ask questions, make comments.

Problem Sets: Throughout the semester, you will be assigned 4 or 5 problem sets. You are allowed (even encouraged) to work in groups, but you need to write up your own solutions. We do not expect to see identical answers from different students.

Midterm: We will have an in-class midterm mid-semester.

Final: At the end of the semester, you will have a final exam, whose date is set by the university.

Your overall grade of the course will be determined by:

Participation:	10%
Problem Sets:	20%
Midterm:	30%
Final Exam:	40%

Outline

Statistical Decision Theory

- Comparing distributions

- Decision making under uncertainty

- Sequential updating, garbling, Blackwell Order

Moral Hazard

- Risk sharing

- The basic model

- Linear contracts, multi-tasking, relational contracts

- Incomplete contracts

Adverse Selection

- Screening with two types

- Screening with a continuum of types

Mechanism Design

- Revelation Principle

- VCG Mechanisms

- Payoff equivalence, revenue equivalence

- Myerson-Satterthwaite Theorem

Strategic Communication

- Signaling

- Cheap talk

- Bayesian persuasion