

HE 4014 Information Economics

Instructor

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Course Webpage: NTULearn

Lecture and Tutorial Sessions

Lecture

Time: Tuesdays 9:30-11:30am
Venue: LT18

Tutorial Sessions

Time: Tuesdays 1:30-3:30pm; 3:30-5:30pm
Venue: TR66

Textbooks

Lecture notes will be posted on NTULearn before the lecture. There is no required textbook for this course. Some useful references are listed below:

"*Contract Theory*" by Patrick Bolton and Mathias Dewatripont, first edition

"*Auction Theory*" by Vijay Krishna, second edition

"*The Economics of Contracts: A Primer*" by Bernard Salanie, second edition

"*The Theory of Corporate Finance*" by Jean Tirole, first edition

"*Microeconomic Theory*" Andreu Mas-Collel, Michael Whinston and Jerry Green, first edition

Pre-requisites

Courses: HE 2001 and HE 3002 (or equivalents such as MTH361)

Students who are interested in this course but have not taken HE3002 (Game Theory and Applications to Social Sciences) or its equivalent, may be allowed to enrolled in the class, provided that they are currently taking one of these courses this semester. Please contact the instructor for eligibility.

Proficiency in optimization and basic probability theory is required and expected.

Course Description and Scope

This course introduces basic concepts and models in information economics, also known as the theory of incentives. This branch of economics highlights market frictions due to information asymmetry among market participants. In the course, we will discuss the nature of these frictions, and analyze how different contracts and institutions arise as remedies to these frictions. The concepts and methodologies developed have seen applications in a wide range of areas including labour economics, market design, corporate finance, and industrial organizations.

Loosely speaking, the module can be broken down into three parts. First, we analyze situations in which agent(s) has *hidden information*, and study how an uninformed principal designs a contract or more generally, a mechanism to overcome the information asymmetry. Second, we consider problems involving the informed agent making the first move, with the focus of understanding agents' behaviors in situations involving hidden information. Finally, we study agency problems arising from *moral hazard (in other words, hidden action)*, and cover topics including risk-incentive tradeoff, team production, and relational contract.

Assessment

Problem Sets (25%)

There are 6 problem sets for this course. Problem sets will be posted on the NTU Learn website, typically on Wednesdays. The assignment is due at the beginning of the class in the following week. You can work on the assignments in group, with the maximum group size being 4 students. Each group needs to submit only one copy of the assignment, with names of all group members written on it. Late assignments will NOT be accepted.

Midterm Quiz (25%)

The midterm quiz is scheduled on March 10. It is open-book, but no electronic devices other than calculators are allowed. If you miss the midterm, and have a legitimate excuse, the weight for the midterm will be reallocated to the final exam. There is no "make-up" midterm exam.

Final Examination (50%)

The final exam is cumulative and closed-book.

Proposed Lecture Schedule

Week	Date	Topic
1	1/13	Introduction and Static Bayesian Games
		No tutorial sessions
2	1/20	Auction I
		Auction II
3	1/27	Screening
		Discussion on Problem Set 1
4	2/3	Revelation Principle
		Discussion on Problem Set 2
5	2/10	Efficient Mechanism Design
		Efficient Mechanism Design: Applications
6	2/17	Revenue-Maximizing Mechanism Design
		Discussion on Problem Set 3
7	2/24	Dynamic Bayesian Games
		Signaling
8	3/10	Midterm Quiz
		No Tutorial Session
9	3/17	Disclosure of Verifiable Information
		Information Cascades
10	3/24	Moral Hazard
		Discussion of Problem Set 4
11	3/31	Moral Hazard: Team Production
		Discussion of Problem Set 5
12	4/7	Relational Contract
		Discussion of Problem Set 6/Review

Note: The schedule above is tentative and may be modified as we go. Major changes will be announced in advance in lectures and/or NTULearn website.