

C007087 Economics of Uncertainty and Information(2022/2023)

August 30, 2022

Course Information.

- Instructor: Haihan Yu
 - Email: haihanyu@proton.me, Academic Website: [haihan-yu.github.io](https://github.com/haihan-yu))
- Classroom: 6107
- Time: Week 1-16(13:30-15:05)
- Office hour: by appointment via email

Course Description.

This is a graduate course on the mathematical models of decision making under uncertainty and asymmetric information. You will learn how to mathematically model people's decision under uncertainty and the problems resulting from asymmetric information. We will also cover various applications, such as insurance, labor contract, education etc.

Course Materials.

This course will be based on the lecture notes which will be delivered weekly. The lecture notes are self-contained. The following books are, not required, but are recommended as supplementary text.

1. Andreu Mas-Colell, , Michael D. Whinston, and Jerry R. Green. Microeconomic theory. Vol. 1. New York: Oxford university press, 1995(We will cover more or less chapter 6,13,14 of this book).
2. Sushil Bikhchandani, Hirshleifer Jack, and John G. Riley. The analytics of uncertainty and information. Cambridge University Press, 1992.

Grade policy.

- Final Exam: 50%
- Weekly assignments: 50%

Tentative Outline.

1. Introduction
2. The economics of insurance
3. Expected Utility
4. Risk Sharing
5. Asymmetric information: Signaling and Screening
6. Asymmetric information: Adverse selection
7. Asymmetric information: Moral Hazard
8. Advanced topics and applications
 - (a) Relational incentive contract
 - (b) Behavioral contract theoryetc.

Course requirement.

1. This course is relatively demanding, but the rewards is significant. If you decide to take this course, put effort on it through the whole semester, including
 - (a) Read the lecture notes before each classes.
 - (b) Take notes at class. If you have any questions, don't be shy, just raise up your hand and ask the question. Keep in mind that asking questions during the lectures has positive externality because other people may have the same questions.
 - (c) Review the lecture notes after classes and finish the weekly assignments. Discussion between classmates is strongly encouraged, but you have to write up your answers **independently**. Any detected cheating in the assignments (which is much easier to find than you believe) means **the end of all deals**.
2. The course is geared towards research. You are encouraged to talk with me about your research. If your research is related to this course, we can spend a few lectures talking about stuff about your research.

3. Follow the rules and enjoy the classes, we will achieve the Pareto outcomes

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