

ADVANCED MICROECONOMICS I: SYLLABUS

Instructor: Xiang Sun

Wuhan University, Economics and Management School
Academic Year 2024–2025, Semester 1

Chinese title: 高级微观经济学 1.

Prerequisite: Calculus, Probability, Intermediate Microeconomics, Basic Game Theory.

Course description: In this course, we focus on information economics, structured into two main parts. The first part explores incentive theory, also known as contract theory, covering key topics such as adverse selection, moral hazard, nonverifiability, and incomplete contracts. The second part delves into information transmission, addressing concepts like signaling, cheap talk, the Blackwell experiment, Bayesian persuasion, and learning.

Our goal is to provide a systematic understanding of these economic interactions by describing and analyzing them within a theoretical framework. These models will offer valuable insights into how individuals behave in specific, often complex, situations, and help us anticipate the likely outcomes of their interactions.

We will not cover the core part of mechanism design and general equilibrium, which are the main focus of Advanced Microeconomics II.

Modular credit: 3 modular credits.

Modular number: EC311.

Time: Week 1–16, Tuesday, 14:05–16:30.

Venue: 3-101 for onsite teaching, and [Tencent Meeting 381 473 0039](#) (password 123456) for online teaching (if necessary).

Module website: <https://www.xiangsun.org/teaching>, for announcements and lecture notes downloading.

Instructor: 孙祥

- E-mail: xiangsun.econ@gmail.com.
 - Before asking questions, please briefly read [提问的智慧](#).
 - Before sending e-mails, please read Topic 7 in [WISE 学生礼仪指南](#).
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- Telephone: +86 027 6875 5072.
- Mailbox: 4-29.

Office hours: Immediately after lectures.

Teaching assistants: 谢宇思 (E-mail: qaz42517@gmail.com).

Main references:

[LM] Jean-Jacques Laffont and David Martimort, *The Theory of Incentives: The Principal-Agent Model*, Princeton University Press, 2002.

[MWG] Andreu Mas-Colell, Michael D. Whinston, and Jerry R. Green, *Microeconomic Theory*, Oxford University Press, 1995.

[T] Steven Tadelis, *Game Theory: An Introduction*, Princeton University Press, 2013.

[K] David M. Kreps, *Microeconomic Foundations II: Imperfect Competition, Information, and Strategic Interaction*, Princeton University Press, 2023.

[S] Xiang Sun, *Lecture Notes on Game Theory: Theory and Examples*, 2018.
Electronic version is available at [Sun's homepage](#). The latest version is on March 5, 2018.

Supplementary readings:

[聂] 聂辉华, *一切皆契约*, 上海三联书店, 2021.

[陈] 陈钊, *信息与激励经济学*, 第三版, 格致出版社, 2018.

[田] 田国强, *高级微观经济学*, 中国人民大学出版社, 2016.

[S] Bernard Salanié, *The Economics of Contracts*, 2ed., The MIT Press, 2005.

[BD] Patrick Bolton and Mathias Dewatripont, *Contract Theory*, The MIT Press, 2005.

Grading:

- Homework: 30%.
 - Submitted within 14 days of posting.
- Closed-book mid-term test: 30%.
 - Date and time: Week 9 or 10.
 - Venue: TBA
 - Scope: Lectures 1–6.
- Closed-book final examination: 40%.
 - Date and time: TBA.
 - Venue: TBA.
 - Scope: All lectures.

Language:

	Lecture notes	Lectures	Homework sets	Mid-term test	Final examination
Chinese		✓			
English	✓	✓	✓	✓	✓

Examination policy:

- Students must bring their student card with a clear photo ID.
 - Cheating will result in a score of zero.
 - No student will be allowed to take the mid-term test or final examination before the scheduled date.
 - There are no make-up opportunities for the mid-term test or the final examination.
 - If a student misses the mid-term test, they may have the weight of the missed test transferred to the final examination, provided both of the following conditions are met:
 - The student notifies the instructor via email in advance of the date and time of the missed mid-term test.
 - The student submits an official medical certificate to the instructor within three working days of the final examination.
- Students who do not take the mid-term test and fail to meet both criteria will receive a score of zero.
- For students who miss the final examination, University policy will apply.

Course outline:

- Part 1: Theory of incentives/Contract theory:
 - Adverse selection,
 - Moral hazard,
 - Nonverifiability and incomplete contract.
- Part 2: Information transmission:
 - Job market signaling,
 - Cheap talk,
 - Blackwell experiment,
 - Bayesian persuasion,
 - Learning (herding, bandit problem).

Tentative time table:

Week	Lecture	Date	Topics	Remarks	
1	1	Sept. 10	[LM] 1, 2.1–2.5	Introduction, Adverse selection: Model	
2		Sept. 17		Holiday	
3	2	Sept. 24	[LM] 2.6	Adverse selection: Analysis 1	
4		Oct. 1		Holiday	
5	3	Oct. 8	[LM] 2.6, 2.10	Adverse selection: Analysis 2	
6	4	Oct. 15	[LM] 2.11–3.6	Adverse selection: Extensions	Hw1
7	5	Oct. 22	[LM] 4.1–4.3	Moral hazard 1	
8	6	Oct. 29	[LM] 4.3–4.4	Moral hazard 2	Hw2
9	7	Nov. 5	[LM] 6.1–6.3	Nonverifiability	
10	8	Nov. 12		Mid-term test	
11	9	Nov. 19		Introduction to incomplete contract	
12	10	Nov. 26	[MWG] 13.C	Signaling	
13	11	Dec. 3	[S] 14.4	Cheap talk	
14	12	Dec. 10	[S] 14.5	Bayesian persuasion	
15	13	Dec. 17		Learning (herding, bandit problem)	
16	14	Dec. 24	[T] 17	Reputation	Hw3
17		TBA		Tutorial Final examination	