

Microeconomic Analysis ECON 5130 L1

Yuk-fai Fong

Syllabus (Draft)

Class Schedule and Attendance Policy

Due to my heavy-duty administrative duties and other work commitments at the School level, some of the classes have to be scheduled. Details are provided in **Appendix 1**.

Students fail to attend more than 7 classes, with or without legitimate justifications, will automatically fail the course. Please study **Appendix 2** carefully to understand the attendance policy.

Teaching Assistants, Office Hours, and Tutorials

Jiayang (Kelly) HE

Email address: kellyhe@ust.hk

Office hour: Monday 3 – 4 p.m.

Venue: LSK 6066

Tutorials: Several tutorials will be provided by PhD student Xin ZUO (xzuo@connect.ust.hk). Announcements will be made ahead of each tutorial.

Description & Course Objectives

This course covers theories of modern microeconomics. It intends to introduce the main theories and methodologies of neoclassical microeconomics, game theory, and information economics. Students are required to understand the theories and concepts intuitively, to master the modeling techniques and derivations, and to solve simple versions of the problems.

Intended Learning Outcomes (ILOs)

By the end of this course, students should be able to:

1. Explain fundamental microeconomic concepts, including consumer theory, producer theory, market equilibrium, and simple game theory.
2. Construct and interpret simple economic models to explain real-world phenomena.
3. Apply microeconomic principles and simple game theory to analyze economic policies and evaluate their potential impacts.

AASCSB Assurance of Learning (AOL) - MSc

This course will serve to assess learning goals 1 and 3 set out by the program.

Learning Goal 1: Graduates will be able to master the core of scientific knowledge for their discipline.

➤ **Learning Objectives:**

Objective 1.1: Summarize the strengths and limitations of the knowledge core.

Objective 1.2: Synthesize the knowledge core to evaluate business ideas.

➤ **AOL Assessment Rubrics:**

Learning Objectives	Emerging	Developing	Mastering
1.1 Summarize the strengths and limitations of the knowledge core.	Demonstrates insufficient understanding of the strengths and limitations of the knowledge core.	Demonstrates moderate understanding of the strengths and limitations of the knowledge core.	Demonstrates comprehensive understanding of the strengths and limitations of the knowledge core.
1.2 Synthesize the knowledge core to evaluate business ideas.	Demonstrates insufficient ability to synthesize and evaluate business ideas.	Demonstrates average ability to synthesize and evaluate business ideas.	Demonstrates excellent ability to synthesize and evaluate business ideas.

➤ **Assessment Vehicle used to measure the Learning Goal 1:**
Mid-term and final exams

➤ **Learning Goal 3:** Graduates will be able to integrate their knowledge and skills in business applications.

➤ **Learning Objectives:**

Objective 3.1: Combine suitable knowledge and skills to analyze and propose solutions to business problems.

Objective 3.2: Formulate sound, practical recommendations and communicate them to a business audience.

➤ **AOL Assessment Rubrics:**

Learning Objectives	Emerging	Developing	Mastering
3.1 Combine suitable knowledge and skills to analyze and propose solutions to business problems.	Insufficiently proficient in combining suitable knowledge and skills to analyze and propose applicable solutions to business problems.	Moderately proficient in combining suitable knowledge and skills to analyze and propose applicable solutions to business problems.	Highly proficient in combining suitable knowledge and skills to analyze and propose applicable solutions to business problems.
3.2 Formulate sound, practical recommendations and communicate them to a business audience.	Insufficiently proficient in formulating sound, practical recommendations and communicate them to a business audience.	Moderately proficient in formulating sound, practical recommendations and communicate them to a business audience.	Highly proficient in formulating sound, practical recommendations and communicate them to a business audience.

Assessment Vehicle used to measure the Learning Goal 3:

Final exams

This AACSB AOL assessment exercise does not affect students' learning experience and course grades.

Course Content

The first part of the course focuses on standard theories in advanced microeconomics. The second and third parts of the course introduce students to game theory and oligopoly competition. In the fourth part of the course, we cover some applications of microeconomics to competition policies and strategic interactions among firms.

Resources

Course Website

Slides, reading materials, and problem sets are there. All the slides shown in class are downloadable from this website.

Optional Textbook

Hal Varian, Microeconomic Analysis, Third Edition

Other Supplementary Readings

Wang, S. (2016). Microeconomic Theory. 3rd ed., PDF copy, free.

Jehle, G.A.; Reny, P.J. (2011). Advanced Microeconomic Theory, 3rd ed.

Mas-Colell, et al. (1995). Microeconomic Theory. Oxford University Press.

Laffont, J.J. (1995). The Economics of Uncertainty and Information. MIT.

Tentative Course Outline

Part I. Foundations of consumer theory

1. Introduction to microeconomic analysis
2. Preferences and rational choice
3. Utility functions
4. Budget constraints
5. Utility maximization
6. Expenditure minimization
7. Income and substitution effects
8. Revealed preference
9. Product attributes and indifference curves

Part II. Producer theory (Abridged) and competitive markets

10. Production theory
11. Profit maximization
12. Cost minimization
13. Competitive markets and partial equilibrium
 - o Market supply and demand
 - o Consumer and producer surplus
 - o Taxes and welfare incidence
14. Competitive equilibrium and welfare analysis

15. Externalities

Part III. Monopoly and pricing strategy

21. Monopoly

- o Monopoly pricing and output
- o Markups and elasticity
- o Welfare loss

22. Price discrimination

- o First-, second- and third-degree discrimination
- o Screening and nonlinear pricing
- o Applied pricing examples

23. Bundling and tying

- o Pure and mixed bundling
- o Demand sorting
- o Profit and welfare effects

24. Product Design and Price Discrimination

Part IV. Game theory and oligopoly

25. Foundations of game theory

26. Oligopoly basics

- o Cournot competition
- o Bertrand competition

27. Sequential oligopoly

- o Stackelberg leadership
- o First- and second-mover considerations

28. More advanced oligopoly

- o Strategic substitutes and complements
- o Repeated interaction
- o Entry, commitment and deterrence

29. Product differentiation

- o Horizontal and vertical differentiation

- o Hotelling-style spatial competition
- o Endogenous product positioning

30. Cartels and tacit collusion (This topic will be revisited in Section VI)

- o Sustainability of collusion
- o Repeated games
- o Market conditions facilitating collusion

Part V. Choice under uncertainty and information asymmetry

16. Decision-making under uncertainty

- o Expected utility
- o Risk aversion
- o Certainty equivalents and risk premiums
- o Insurance decisions

17. Asset markets

- o Intertemporal and state-contingent choice
- o Risk allocation

18. Asymmetric information

- o Adverse selection
- o Moral hazard
- o Signalling

19. Incentive contracts

- o Principal–agent problems
- o Participation and incentive-compatibility constraints
- o Optimal incentive design

20. Experience goods, credence goods, and reputation

Part VI. Competition policy and business applications

31. Market definition and market power

- o SSNIP test

32. Cartels and price fixing

- o Virgin Atlantic–British Airways case

- o Hong Kong public-housing renovation cartel
- o Competition-law guidelines
- 33. Predatory pricing
- 34. Bundling and tying as antitrust issues
 - o Microsoft case
- 35. Exclusive contracts and vertical restraints
- 36. Applied airline-competition cases
 - o Spirit Airlines
 - o Northwest Airlines
- 37. Competition-policy legislation and enforcement
 - o Sherman Act
 - o Clayton Act
 - o FTC Act
 - o Hong Kong First and Second Conduct Rules
 - o Leniency policies

Part VII. Platform Economics and Emergence of AI

- 38. Network economics and platform competition
 - o Two-sided markets
 - o Network effects
 - o Platform pricing and competition
- 39. Impact of AI on digital platforms

Course Prerequisites

Basic math knowledge and optimization methods.

Assessment and Grading

A0: Problem Sets (0%) --- There are a number of problem sets. No need to hand in the problem sets.

A1: class attendance and participation (15%)

A2: one midterm exam (25%)

A3: one final exam (60%). The final exam will be arranged by ARRO.

Overall Grading Plan for the Course:

- All assessment marks for individual assessed tasks will be released within two weeks of the due date.
- The alignment of the course ILOs and Assessment is shown in the following table.

Learning outcome	Assessment
1. ILO1	A1, A2, A3
2. ILO2	A1, A2, A3
3. ILO3	A1, A2, A3

Rubrics for Final Grade

Grades	Short Description	Elaboration on subject grading description
A+, A, A-	Excellent Performance	Demonstrates a comprehensive grasp of microeconomic theories and tools covered in the course. Exhibit exceptional skills in utilizing the taught techniques to analyze real-life economic issues. Excels in the exams.
B+, B, B-	Good Performance	Shows a solid grasp of the microeconomic theories and tools covered in the course. Demonstrates good skills in utilizing the taught techniques to analyze real-life economic issues. Performs well in the exams.
C+, C, C-	Satisfactory Performance	Possesses adequate knowledge of microeconomic theories and tools covered in the course. Occasionally demonstrating a decent skill in utilizing the taught techniques to analyze real-life economic issues. Acceptable performance in the exams.
D+, D	Marginal Pass	Has threshold knowledge of microeconomic theories and tools covered in the course. Show limited skills in utilizing them. Below-average performance in the exams.
F	Fail	Demonstrates insufficient understanding of microeconomic theories and tools covered in the course. Lack skills in utilizing them. Unsuccessful in the exams.

Course AI Policy

- You can use any generative AI models freely to help your study in this course, including the preparation for classes and the exams, subject to changes based on the university's general policies.

- However, no AI tools are allowed in the exams.

Academic Integrity

Students are expected to adhere to the university's academic integrity policy. Students are expected to uphold HKUST's Academic Honor Code and to maintain the highest standards of academic integrity. The University has zero tolerance of academic misconduct. Please refer to [Academic Integrity | HKUST – Academic Registry](#) for the University's definition of plagiarism and ways to avoid cheating and plagiarism.

Classroom Etiquette

You are expected to be punctual for lectures and I will start and end the lecture on time. You are welcome to bring your laptop or other devices to lectures for learning purposes. Respect the others in the class and do not disturb others with side conversations, internet surfing, email-checking or instant-messaging during class time.

Appendix 1: Class Schedule

#	Date (Day)	Time	Venue
#1	24 Aug (Mon)	09:15AM - 12:05PM	Rm 2, 31/F, Tower 1,Millennity
#2	26 Aug (Wed)	09:15AM - 12:05PM	Rm 2, 31/F, Tower 1,Millennity
#3	31 Aug (Mon)	09:15AM - 12:05PM	Rm 2, 31/F, Tower 1,Millennity
/	2 Sep (Wed)	No Class	
#4	4 Sep (Fri) – Make-up	07:00PM - 09:50PM	Rm 5404, Lift 17-18 (93)
/	7 Sep (Mon)	No Class	
/	9 Sep (Wed)	No Class	
5	11 Sep (Fri) – Make-up	07:00PM - 09:50PM	Rm 5404, Lift 17-18 (93)
6	14 Sep (Mon)	09:15AM - 12:05PM	Rm 2, 31/F, Tower 1,Millennity
7	16 Sep (Wed)	09:15AM - 12:05PM	Rm 2, 31/F, Tower 1,Millennity
8	21 Sep (Mon)	09:15AM - 12:05PM	Rm 2, 31/F, Tower 1,Millennity
9	23 Sep (Wed)	09:15AM - 12:05PM	Rm 2, 31/F, Tower 1,Millennity

10	25 Sep (Fri) – Make-up	07:00PM - 09:50PM	Rm 5404, Lift 17-18 (93)
11	28 Sep (Mon)	09:15AM - 12:05PM	Rm 2, 31/F, Tower 1,Millennity
/	30 Sep (Wed)	No Class	
/	5 Oct (Mon)	No Class	
/	7 Oct (Wed)	No Class	
12	12 Oct (Mon)	09:15AM - 12:05PM	Rm 2, 31/F, Tower 1,Millennity
/	14 Oct (Wed)	No Class Potential conflict with ExecEd teaching	
/	19 Oct (Mon)	No Class Public holiday	
/	21 Oct (Wed)	No Class MSc Break Week (19 Oct – 24 Oct)	
13	26 Oct (Mon)	09:15AM - 12:05PM	Rm 2, 31/F, Tower 1,Millennity
14	28 Oct (Wed)	09:15AM - 12:05PM	Rm 2, 31/F, Tower 1,Millennity
15	2 Nov (Mon)	09:15AM - 12:05PM	Rm 2, 31/F, Tower 1,Millennity
/	4 Nov (Wed)	No Class School Administrative Committee Meeting	
/	9 Nov (Mon)	No Class	
/	11 Nov (Wed)	No Class	
16	16 Nov (Mon)	09:15AM - 12:05PM	Rm 2, 31/F, Tower 1,Millennity
17	18 Nov (Wed)	09:15AM - 12:05PM	Rm 2, 31/F, Tower 1,Millennity
18	30 Nov (Mon) – Make-up	09:15AM - 12:05PM	Rm 2, 31/F, Tower 1,Millennity

- Normal number of contact hours = 4 credits *13 = 52 hours
- Total no. of sessions = 18 (51 hours) + exam 3 hours = 54 hours

Appendix 2: Attendance Policy

Our course is a **4-credit** course. According to **4-credit** courses,

- 1st – 7th absences are permitted only with valid proof of legitimate reason.
- If a student is absent for any reason for more than 7 sessions, she/he will be required to withdraw from the course, and a “W” (representing withdrawal from class) will be shown on the transcript. If the withdrawal request is unsuccessful, she/he will fail the course, and an “F” will be shown on the transcript.

- Students who are late for more than **30 mins** will be considered as **Absent from Class**.

1. Absence approval

Absences may be approved upon submission of valid supporting documents for legitimate reasons. However, approved absences will still be counted as absences for attendance record purposes and toward the maximum number of absences permitted under the course attendance policy.

2. Attendance taking

For courses held in MSc Learning Hub (LH):

Make use of the attendance record collected by the attendance-taking machines in the Learning Hub.

For courses held in Clear Water Bay Campus (CWB):

The Program Office or TA will attend the first 30 minutes of each section to take attendance using attendance-taking machines.

For courses held in Business School Central (BSC):

Attendance sheets will be prepared by the Program Office and brought to the venue by the course instructor or TA.

Completed attendance sheets should be returned to the Program Office for record keeping and follow-up actions.

Attendance will only be recognized based on the attendance-taking machine records/ official attendance sheet.

3. Warning Issuance and Penalties

If any attendance irregularities are identified (e.g., excessive absences), the Program Office will issue a warning to the student.

Once the attendance limit is exceeded, the student will be required to submit a course withdrawal request.

4. ECON 5130 L1 Adopts the Check-in/Check-out policy

Under the check-in/check-out policy, students are also required to check out when the class ends. The purpose of this policy is to encourage students to attend the entire class rather than only part of it.

Under the check-in/check-out policy, students will be recorded as "**Absent**" if they do not have both a check-in and a check-out record.

Check-in record	Check-out record	Attendance Record
Yes	No	Absent
No	Yes	Absent
Yes	Yes	Present
No	No	Absent