Econ 3133 Microeconomic Theory II

Hong Kong University of Science and Technology
Department of Economics

Course Information

Instructor: Yangguang (Sunny) HUANG
Email: huangyg@ust.hk
Class time: Tue Thur 15:00-16:20 (Room 2503)
Office hour: Tue Thur 10:40-11:40 (LSK 6075)
Course website: canvas.ust.hk

Teaching assistant:
Email:
Tutorial time: Fri 16:30-17:20 (LSK 1007)
Office hour: (LSK 6066)

Textbook:
Microeconomic Theory: Basic Principles and Extensions, by Nicholson and Snyder (Required).
Intermediate Microeconomics with Calculus: A Modern Approach, by Hal R. Varian (Supplemental).

Grading:
- Homework assignments, 10%
- Midterm exam, 30%
- Final exam, 60%

For homework, group study is encouraged, but you need to turn in your own homework.
Final exam covers all the course materials (cumulative). Absence in an exam without a prior notification and a reasonable and verifiable justification will result in zero point for that part.

Other Information

Student Conduct and Academic Integrity (http://acadreg.ust.hk/generalreg.html)
Learning Environment (www.ust.hk/vpaao/conduct/good_learning_experience.pps)
Center for Language Education (cle.ust.hk/)
Math Support Center (www.math.ust.hk/~support/)
The final course grade will be given by the University guideline (tpghandbook.ust.hk/course-grading).

Learning Goal

This is a sequel to the Microeconomic Theory I (Econ 3113). This two-part sequence is designed to provide a detailed study of basic topics in Microeconomics with a special emphasis on using a rigorous analytical approach. In Econ 3133, we study firms' behavior and market/strategic equilibrium in detail. Topics include firms' production and cost, competitive equilibrium and welfare, monopoly, game

theory and its application in Microeconomics. Emphases are placed on a rigorous analytical and mathematical approach, and multivariate calculus will be used extensively.

Per Program Intended Learning Objective (PILO) for BSc in Economics and Finance, after completing this course, students will
1. Understand the logic, scientific basis, and critical thinking of economic analyses (PILO 1);
2. Have a sophisticated knowledge of economics, apply it to explain economic and social phenomena, and make sound economic decisions (PILO 4);
3. Develop ability to qualitatively analyze basic economic and social problems. Conduct basic economic analysis and research of the economy and society (PILO 4);
4. Collaborating effectively with your team members to answer questions in homework (PILO 5, 7);
5. Have informed ethical thinking based on rigorous economic and social analyses (PILO 8)
6. Be a lifelong user of economic analysis (PILO 9)

Outline and Schedule

Course Introduction and Math Review (1 lecture)

- One economic agent
  - Endogenous variable
  - Exogenous variable
  - Comparative statics

- Multiple economic agents
  - Strategic interaction
  - Equilibrium

Module 1. One Economic Agent: Profit-maximizing Firm (8 lectures)

- Production functions (Ch. 9)
  - Basic concepts
  - Labor versus capital: technical substitution and more
  - Discussion: machine replacing human and inequality

- Cost functions (Ch. 10)
  - Cost-minimization problem
  - Property of cost functions
  - Discussion: make or buy? the boundary of firm

- Profit maximization (Ch. 11)
  - Profit maximization of a price-taking firm
  - Profit maximization of a firm with market power
  - Marginal revenue and demand elasticity
  - Discussion: productivity

Module 2. Many Economic Agents: Competitive Market and Partial Equilibrium (3 lectures)

- Partial Equilibrium (Ch. 12)
    - Market demand and supply
    - Short-run market equilibrium
    - Comparative statics of market equilibrium
    - Long-run market equilibrium
    - Welfare analysis
    - Discussion: the invisible hand and the visible hand

- Monopoly (Ch. 14)
    - Monopoly behavior
    - Regulating monopoly
    - Price discrimination
    - Discussion: paradox in regulating monopoly

Midterm exam (1 lecture, the tentative date is Oct 17th)

Module 3. Multiple Strategic Economic Agents (12 lectures)

- Introduction to game theory (Ch. 8)
    - Simultaneous move game
    - Nash equilibrium
    - Mixed-strategy Nash equilibrium
    - Sequential move game
    - Subgame perfect equilibrium
    - Repeated game

- Imperfect competition (Ch. 15)
    - Cournot quantity competition model
    - Bertrand price competition model
    - Hoteling model
    - Stackelberg leader-follower model
    - Merger and collusion
    - Discussion: antitrust and competition policy

- Externalities and public goods (Ch. 19)
    - Externality
    - Public goods
    - Discussion: social welfare and public choice

Course Conclusion

Final exam