HKUST-Department of Economics
Course Outline Fall 2018
ECON2174 – Math for Economists

Class meetings	**Room 6573, near lifts 29-30**
Date/Time	Tu/Th: 1:30 – 2:50pm
Tutorial	**Room 1034, LSK Building**
Date/Time	Mo 6:00 – 6:50pm (tutorial will start on Sept 10)
Lecturer:	**Zhou Lingzhi**
Email:	lzzhou@ust.hk
Tel:	2358-7596
Office:	Room 6056, LSK Building
Office hours:	3:30 – 5:00 pm on Wednesdays or by appointment
TA:	**Hector Cheng**
Email:	echector@ust.hk

Course Description

The foundations of economic theory are based on mathematical methods that have become indispensable for a clear understanding of the current economic literature. This course introduces students to a range of mathematical concepts and techniques that are necessary for undergraduate studies in economics. It is intended as a general introduction with special emphasis on linear algebra and optimization.

Course intended learning outcomes

- Students will have some basic understanding of calculus for functions of one and several variables, as well as multivariate optimization problems with or without constraints.
- Students will learn the basics of linear algebra, which will be used to some extent in economic theory, and even more in econometrics.
- Help students acquire the mathematical skills, which are essential for the study of economic theory.

Resources

Main textbook:

"Fundamental Methods of Mathematical Economics", fourth edition, by A.C. Chiang and K. Wainwright (2005), McGraw-Hill, HKUST bookstore. HKUST library reserve.

Supplementary textbook:

"Essential Mathematics for Economic Analysis", fourth edition, by K. Sydsæter, et al. (2005), Prentice Hall, HKUST library reserve (especially useful for students interested in more practice questions).

Assessment

Homework assignment	10%
Midterm Exam (Thursday Oct 18 in-class)	35%
Final Exam (Date and venue TBD)	55%

Homeworks/Exercises

Working out problems is essential for learning math. Each week by Satday, I will post problem sets onto CANVAS for you to practice. Your TA will go through them the following week. Four of them will be selected (will inform you of due dates when selected) for you to hand in to TA before tutorial starts.

Feel free to discuss homework with your fellow students, but you must **write out** the answers on your own. Copied or printed submissions will receive zero credit. Late submissions will be penalized.

Exams

There will be no make-up for the midterm. If you miss the midterm, you will receive zero for that exam. The only exception is a medical reason with doctor's medical certificate (must be submitted to the Economics department on 6th floor LSK building on the working day after your medical leave), in which case you will receive 90% weight for your final exam.

Exam (apply to both midterm and final) will be closed book, closed notes.

Final exam is not cumulative, topics tested in midterm will not appear in the final.

Communication

- When you send emails to me, please make email title start with **[EC2174].**
- Lecture notes, problem sets and announcements will be posted on CANVAS.
- If you have questions regarding course content, please ask me or TA face to face. It is extremely inefficient to go back and forth through emails.

Syllabus

1. Economic models and Equilibrium analysis (Chapters 2 and 3)
2. Linear models and Matrix algebra (Chapters 4 and 5)
3. Differentials and general function models (Chapters 6, 7, 8 and Page 383 - 389)
4. Optimization – one variable (Chapter 9)
5. Optimization - More than one variable (Chapter 11)
6. Constrained optimization (Chapter 12 and 13)