

ECON 2174

Mathematics for Economists

Department of Economics, HKUST

Instructor

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Overview

This course introduces essential mathematical tools for advanced economic studies, covering calculus, linear algebra, and optimization methods, with a focus on economic applications.

Prerequisites

A basic understanding of calculus is assumed.

Learning Materials

Comprehensive lecture slides will be provided and are sufficient for homework and exams. For supplementary explanations, examples, and exercises, the following references are recommended:

- A.C. Chiang and K. Wainwright (2005), *Fundamental Methods of Mathematical Economics*, McGraw-Hill.
- C.P. Simon and L. Blume (1994), *Mathematics for Economists*, Norton.

Assessment and Grading

- Homework: 20%
- Midterm Exam: 35%
- Final Exam (cumulative): 45%

Letter grades are assigned using the following general guidelines:

- A: Excellent understanding and application of course material; outstanding performance on assessments.
- B: Good understanding and consistent performance.
- C: Satisfactory grasp of material with adequate performance.

D: Marginal pass with limited understanding and inconsistent work.

F: Failure to demonstrate understanding or complete required work.

Homework

Problem sets will be assigned approximately every two weeks and graded primarily on effort. Collaboration with classmates or use of AI tools is permitted, but all submitted work must be written in your own words.

Exams

The midterm exam will be held in class; the final exam is cumulative. Dates will be announced at least two weeks in advance.

Tutorials

Tutorial sessions may be scheduled as needed. Announcements will be communicated via course email.

Main Topics

- Preliminaries
- Calculus and real analysis
- Linear algebra
- Optimization

Intended Learning Outcomes (ILOs)

Upon successful completion of this course, students will:

1. Be able to construct and analyze mathematical models of economics. (assessed through problem sets and exams)
2. Be able to write coherent and logically structured solutions or proofs for mathematical problems in economics. (assessed through problem sets and exams)

Honor Code

Plagiarism and cheating are strictly prohibited. Violations will result in disciplinary action, including possible termination of studies, in accordance with University policy on academic honesty.