University of International Business and Economics
International Summer School

ECON444 Mathematical Methods in Economics

Term: July 18th– August 12th, 2022
Instructor: Cong Xia
Home Institution: Central University of Finance and Economics
Email: xiacong@cufe.edu.cn
Class Hours: Monday through Friday, 120 minutes each day (2,400 minutes in total)
Office Hours: TBD
Discussion Session: 2 hours each week

Total Contact Hours: 64 contact hours (45 minutes each, 48 hours in total)
Credit: 4 units
Location: WEB

Course Description:

This class is for these students of economics intent on learning the basic mathematical methods that have become indispensable for proper understanding of the current economic literature. In this course, the following major types of economic analysis are covered: equilibrium analysis, comparative statistics, optimization problems, and dynamics. To tackle this, the following mathematical methods are introduced in due courses: Matrix algebra, differential and integral calculus, differential equations, and optimal control theory. This course will build a solid base for further learning in the economic field such as macroeconomic theory, macroeconomic theory and economic growth and development.

Required Textbook:

Fundamental Methods of Mathematical Economics, 4th edition. By Alpha C. Chiang and Kevin Wainwright.

Grading Scale:

You class performance will be graded according to the following grade scale:

A	90-100	C+	72-74
A-	85-89	C	68-71
B+	82-84	C-	64-67
B	78-81	D	60-63
B-	75-77	F	below 60

Grading Policy:

Participation: 10%
Midterm Exam: 40%
Final Exam: 50%

Exam: All exams are 'closed book'. Calculators may be used but accessing the Internet, using e-mail or any other text-messaging or internet devices, such as cell phones, smart watches or PDAs, will not be allowed. Exams must also be taken at the scheduled time. There will be no make-up exams.

Plagiarism & Fraud:

In this course, there is zero tolerance on academic misconduct. Academic misconduct will be admitted by the rules of School of International Education (SIE) of University of International Business and Economics. The violation of academic integrity, include, but are not limited to, copying works from a published paper or from another student, failing to cite references appropriately, manipulating the results, etc. The instructor will make a final choice on the deduction of the final grades.

Class Rules:

Students are expected to:
- Complete the day's required reading and assignments before class
- Review the previous day's notes before class; make notes about questions you have about the previous class or the day's reading
- Participate in class discussions and complete required written work on time

Course Schedule:

	Contents	Textbook Chapter
Class 1	Introduction and Economic models	Chapter 1 2
Class 2	Equilibrium Analysis in Economics	Chapter 3
Class 3	Linear Models and Matrix Algebra	Chapter 4
Class 4	Linear Models and Matrix Algebra, part 2	Chapter 4
Class 5	Comparative Statics and the Concept of Derivative	Chapter 5
Class 6	Comparative Statics and the Concept of Derivative, part 2	Chapter 5
Class 7	Rules of Differentiation and Their Use in Comparative Statics	Chapter 7
Class 8	Reviewing for Midterm Exam	**Chapter 1-7**
Class 9	**Midterm Exam**	
Class 10	Optimization	Chapter 9
Class 11	Optimization	Chapter 10
Class 12	Optimization	Chapter 11
Class 13	Optimization	Chapter 12-13
Class 14	Dynamic Analysis	Chapter 14

Class 15	Dynamic Analysis	Chapter 15
Class 16	Dynamic Analysis	Chapter 16
Class 17	Dynamic Analysis	Chapter 17
Class 18	Dynamic Analysis	Chapter 18-19
Class 19	Reviewing for final Exam	**Chapter 1-20**
Class 20	**Final Exam**	