ECON 3360: Mathematical Economics

2022 Fall Session	
Total Class Sessions: 25	**Instructor: Staff**
Class Sessions Per Week: 5	**Classroom: TBA**
Total Weeks: 5	**Office Hours: TBA**
Class Session Length (Minutes): 145	**Language: English**
Credit Hours: 4	

Course Description:

For economists, mathematical approaches are more precise and useful to explain the economic phenomenon, so it is frequently used. This course introduces students to the mathematical concepts and techniques used in undergraduate economic theory study. Topics covered include equilibrium analysis, matrix algebra, comparative static analysis, unconstrained and constrained static optimization theory. Emphasis will be laid on the applications or economic models rather than abstract mathematical theorems or concepts.

Prerequisite: ECON 2110, ECON 2210, MATH 1210, or first-year calculus course.

Course Assignments:

Homework Assignments:

Homework will be signed every week. You must submit a hardcopy of your completed homework at the end of class on the date due. All five assignments make up 20% of the final course grade. The problem sets will consist of multiple-choice questions and short answer/analytical exercises.

Late homework will NOT be accepted.

Students are encouraged to work together on the problem sets, but each student must turn in individual work. Problem sets are graded on accuracy as well as on effort. Answers that are vague, difficult to read, or appear incomplete will not receive full credit.

Quizzes

There will be 6 quizzes administered through the whole semester and the lowest score will be dropped. Quizzes will always be completed in the first 20 minutes of class. The quiz problems will be similar to homework problems and in-class examples. There will be no make-up quizzes.

Midterm Exam

There will be 2 midterm exams worth 20% each. There will be NO MAKE-UP exams unless proof of medical emergency. The exams will be a mix of multiple-choice questions, T/F questions, and short-essays. The two midterm exams will be based on concepts covered in class. Both will be in-class, close-book, and non-cumulative.

Final Exam

The final exam is worth 25%. There will be cumulative and close-book. **No reasons for a make-up final exam.** Note: The final exam will not be taken during the normal class times. The exact time and location for the final will be announced later.

Course Assessment:

Homework Assignments (1 lowest dropped)	20%
Quizzes (1 lowest dropped)	15%
Midterm Exams 1	20%
Midterm Exams 2	20%
Final Exam (Cumulative)	25%
Total	**100%**

Grading Scale (percentage):

A+	A	A-	B+	B	B-	C+	C	C-	D+	D	D-	F
98-100	**93-97**	**90-92**	**88-89**	**83-87**	**80-82**	**78-79**	**73-77**	**70-72**	**68-69**	**63-67**	**60-62**	**< 60**

Course Materials:

Required Textbook:

Chiang, Alpha C. and Kevin Wainwright 2005. Fundamental Methods of Mathematical Economics, McGraw-Hill

Lecture notes and supplementary practicing exercises will be distributed as the course progress.

Course Format and Requirements:

Format of this course is mainly lectures, together with in-class discussions, quizzes, case study, essay and presentations. Lectures may often go beyond what is included in the textbook. To ensure that students keep up with and make the most of this class, regular attendance is essential. Students must attend no less than eighty percent (80%) of the classes scheduled for the course. More than 20% unexcused absences will result in a lower final grade.

Academic Integrity:

Students are encouraged to study together, and to discuss lecture topics with one another, but all other work should be completed independently.

Students are expected to adhere to the standards of academic honesty and integrity that are described in the Chengdu University of Technology's *Academic Conduct Code.* Any work suspected of violating the standards of the *Academic Conduct Code* will be reported to the Dean's Office. Penalties for violating the *Academic Conduct Code* may include dismissal from

the program. All students have an individual responsibility to know and understand the provisions of the *Academic Conduct Code*.

Special Needs or Assistance:

Please contact the Administrative Office immediately if you have a learning disability, a medical issue, or any other type of problem that prevents professors from seeing you have learned the course material. Our goal is to help you learn, not to penalize you for issues which mask your learning.

Course Schedule:

There are 25 class sessions in 5 weeks. Homework assignments will be distributed as the course proceeds.

Week 1: Class 1- 5
Module 1: Introduction
Course syllabus and Course Introduction
Mathematical Review
Chapter 2: Economic Models
Quiz 1(Calculus Review and Chapter 2)

Week 2: Class 6-10
Module 2: Static (Or Equilibrium) Analysis
Chapter 3: Equilibrium Analysis in Economics
Quiz 2(Chapter 3)
Chapter 4 & 5: Linear Models and Matrix Algebra
Review for Midterm 1
Midterm 1(Chapter 2, 3, 4, and 5)

Week 3: Class 10-15
Module 3: Comparative- Static Analysis
Chapter 6: Comparative Statics and Derivative
Quiz 3(Chapter 6)
Chapter 7: Rules of Differentiation
Quiz 4(Chapter 7)

Week 4: Class 16-20
Module 3: Comparative- Static Analysis (Continue)
Chapter 8: Comparative Static Analysis

Quiz 5 (Chapter 8)
Module 4: Optimization Problems
Chapter 9: Optimization: A special Variety of Equilibrium Analysis
Review for Midterm 2
Midterm 2 (Chapter 6, 7, 8&9)

Week 5: Class 21-25
Module 4: Optimization Problems
Chapter 10: Exponential Functions
Chapter 11: Case of More than One Variable
Quiz 6 (Chapter 10&11)
Chapter 12: Optimization with Equality Constraint
Wrap-up and Review for Final Exam

Final Exam (Cumulative) TBA