



## Nanchang University ECON 35: Mathematical Economics

**Credit:** 4

### ***Contact Hours***

This course is composed of 24 lecture sessions, 3 tutorial sessions and 9 office contact hours. Each lecture session takes 2 contact hours in length; each tutorial session takes 3 contact hours in length; There will be a Q-A review session (3 contact hours) and Final Exam (3 contact hours) at the end of this term. This course has 72 contact hours in total.

### ***Course Description***

This course covers comparative static analysis, single and multiple agent unconstrained and constrained optimization problems and introduction to dynamic analysis.

### ***Required Textbook***

*Fundamental Methods of Mathematical Economics (4th Edition)* by Alpha C. Chiang and Kevin Wainwright.

### ***Grading***

- Participation 10%
- Homework Assignments 15%
- Midterm Exam 1 25%
- Midterm Exam 2 25%
- Final Exam 25%
- Total 100%

|           |         |          |
|-----------|---------|----------|
| A+ 96-100 | A 90-95 | A- 85-89 |
| B+ 82-84  | B 78-81 | B- 75-77 |
| C+ 71-74  | C 66-70 | C- 62-65 |
| D 60-61   | F < 60  |          |

### ***Assignment***

All homework assignments must be submitted prior to the due date. **Late assignments are not accepted.**



Students are encouraged to study in groups: it will make studies productive and fun. However, remember: all assignments must be submitted individually.

### ***Course Schedule***

The course has 24 class sessions in total. All sessions are 2 hours and 15 minutes in length.

Note: the course outline and required readings are subject to change.

Class 1:

Introduction

Class 2:

Equilibrium analysis in economics

Class 3:

Linear models and matrix algebra

Class 4:

Linear models and matrix algebra ; Homework 1 due

Class 5:

Comparative Statics

Class 6:

Differentiation

Class 7:

Optimization of functions of one variable

Class 8:

Optimization of functions of more than one variable ; Homework 2 due

Class 9:

Midterm 1

Class 10:

Lagrange-multiplier method

Class 11:

First-derivative test or first order conditions

Class 12:

Second-derivative or second order conditions; Homework 3 due



Class 13:

Introduction to mathematica 6

Class 14:

Introduction to mathematica 6

Class 15:

Midterm 2 review

Class 16:

Midterm 2

Class 17:

Uncertainty and consumption under capital markets imperfections

Class 18:

Multiple agents optimization

Class 19:

Economic Analysis and Integral Calculus; Homework 4 due

Class 20:

First Order Differential Equations

Class 21:

First Order Difference Equations

Class 22:

First Order Difference Equations; Homework 5 due

Class 23:

Review

Class 24:

Group Report

### ***Attending Policy***

Regular and prompt attendance is required. Under ordinary circumstances, you may miss two times without penalty. Each absence over this number will lower your course grade by a third of a letter and missing more than five classes may lead to a failing grade in the course. Arriving late and/or leaving before the end of the class period are equivalent to absences.

### ***Policy on "Late Withdrawals"***



In accordance with university policy, appeals for late withdrawal will be approved ONLY in case of medical emergency and similar crises.

### ***Academic Honesty***

Nanchang University expects all students to do their own work. Instructors will fail assignments that show evidence of plagiarism or other forms of cheating, and will also report the student's name to the University administration. A student reported to the University for cheating is placed on disciplinary probation; a student reported twice is suspended or expelled.

### ***General Expectations:***

Students are expected to:

- Attend all classes and be responsible for all materials covered in class and otherwise assigned;
- Complete the day's required reading and assignments before class;
- Review the previous day's notes before class and 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;
- Refrain from texting, phoning or engaging in computer activities unrelated to class during the class period;
- While class participation is welcome, even required, you are expected to refrain from private conversations during the class period.

### ***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.