



Nanchang University
ECON424: Strategic Interaction and Game Theory
(Last Updated in Jan. 2025)

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 provides a rigorous introduction to non-cooperative game theory and its application to strategic decision-making. Students will explore the fundamental models of strategic interaction, including static and dynamic games with complete and incomplete information. Key topics include Nash equilibrium, subgame perfection, Bayesian games, signaling, and repeated interactions. The course emphasizes both theoretical foundations and real-world applications in economics, business, and policy.

By taking this course, students will:

1. Define, compute, and interpret solutions for Nash equilibrium (pure and mixed strategies), subgame perfect equilibrium, and Bayesian Nash equilibrium.
2. Model strategic situations using normal form and extensive form representations.
3. Apply game-theoretic tools to analyze market competition, bargaining, auctions, and signaling.
4. Evaluate the role of information, credibility, and repetition in strategic interactions.
5. Design simple experiments to test game-theoretic predictions.
6. Critically assess strategic behavior in real-world contexts using game-theoretic reasoning.

Note: This Syllabus is subject to change based on the needs of the class.

Required Textbook

Textbook:

Strategy: An Introduction to Game Theory by Joel Watson. 3rd edition. W. W. Norton & Company.

Game Theory for Applied Economists by Robert Gibbons. Reprint edition. Princeton University Press.



Grading

- Attendance 5%
- Assignments 20%
- Quizzes 15%
- Midterm Exam 20%
- Final Exam 40%

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		

Course Schedule

The course has 24 class sessions in total. All sessions are 2 contact hours in length. At the end of this term, there will be a Q-A review session(3 contact hours) and Final Exam (3 contact hours).

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

Class 1:

Introduction to Games and Strategies

Class 2:

Normal Form and Dominant Strategy Equilibrium

Class 3:

Iterated Elimination and Rationalizability

Class 4:

Pure-Strategy Nash Equilibrium

Class 5:

Applications: Duopoly Market Models

Class 6:

Mixed Strategies and Equilibrium

Class 7:

Applications of Mixed Strategies

Class 8:

Extensive Form and Game Trees



Class 9:

Backward Induction in Perfect Information Games

Class 10:

Subgame Perfect Nash Equilibrium

Class 11:

Applications: Bargaining and Credible Threats

Class 12:

Midterm Exam

Class 13:

Bayesian Games and Incomplete Information

Class 14:

Bayesian Nash Equilibrium

Class 15:

Applications: Auction Theory

Class 16:

Signaling Games Introduction

Class 17:

Perfect Bayesian Equilibrium Concept

Class 18:

Solving Signaling Games

Class 19:

Applications: Job Market Signaling

Class 20:

Repeated Games and Cooperation

Class 21:

Folk Theorem and Trigger Strategies

Class 22:

Experimental Tests of Game Theory

Class 23:

Course Review and Synthesis



Class 24:
Final Exam

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.