



蘇州大學  
Soochow University

# ECO 240 Strategy and Game Theory

Summer 2023

**Course Credits:** 4

**Contact Hours:** 55 hours

**Instructor:** TBA

**Email:** TBA

## COURSE OBJECTIVES

---

This is an advanced course that explores the principles, models, and applications of game theory in various fields, including economics, political science, and business. The course delves into the analysis of strategic decision-making and interactions among rational individuals or organizations. Students will learn how to model and analyze different types of games, including cooperative and non-cooperative games, and gain insights into the strategic behavior of players in different settings. By studying game theory, students will develop critical thinking skills and learn how to apply game-theoretic concepts to real-world situations.

Upon Completion of this Course, students will be able to:

1. Transform an informal description of a strategic situation in a formal problem of game theory susceptible to be analyzed using the tools of game theory;
2. Analyze the strategic behavior of the agents that take part in a game, anticipating the strategies of each player;
3. Apply the solution concepts in those situations as well as evaluate the feasibility and efficiency of the solution proposed;
4. Analyze the robustness of the solution proposed in front of changes in the behavior, motivation or other variables of the agents or of the strategic situation.

## PREREQUISITES

---

MAT 110 Calculus I; MAT 120 Calculus II



## GRADING

---

Grades will be determined by accumulating points, with 100 points being the maximum, as follows:

ITEM	POINTS
2 Assignments	20 Points
2 Quizzes	20 Points
Midterm	25 Points
Final Exam	35 Points
Total	100 Points

Late submissions will be graded at the end of the course. Grades will be assigned according to the following rule:

$$A \geq 90 > B \geq 80 > C \geq 70 > D \geq 60 > F.$$

We reserve the right to make adjustments to the overall grading policy.

## COURSE MATERIALS

---

### Required Texts:

*Games, Strategies and Decision Making*. Joseph Harrington Jr. Worth Publishers. (Second edition) 2014.

### Recommended (Optional) Texts or Other Materials:

None.

## COURSE TOPICS

---

MODULE	TASKS
Module 1	<p><b>Topics:</b> Topic 1: Introduction to Strategic Reasoning Topic 2: Extensive Form Games Topic 3: Strategic Form Games Topic 4: A Few More Issues in Modeling Games</p> <p><b>Assessments:</b> Assignment #1</p>



Module 2	<p><b>Topics:</b> Topic 5: Strict and Weak Dominance Topic 6: Rationalizability Topic 7: Nash Equilibrium Topic 8: Two-Player Games/Three-Player Games</p> <p><b>Assessments:</b> Quiz #1</p>
Module 3	<p><b>Topics:</b> Topic 9: Symmetric Games Topic 10: Asymmetric Games Topic 11: Making Decisions under Uncertainty Topic 12: Mixed Strategies and Nash Equilibrium</p> <p><b>Assessments:</b> Assignment #2 Midterm Exam</p>
Module 4	<p><b>Topics:</b> Topic 13: Backward Induction and Subgame Perfect Nash Equilibrium Topic 14: Waiting Games: Preemption and Attrition Topic 15: Forward Induction Topic 16: Bayesian Games and Bayes–Nash Equilibrium</p> <p><b>Assessments:</b> Quiz #2</p>
Module 5	<p><b>Topics:</b> Topic 17: Signaling Information Topic 18: Repeated Games Topic 19: Evolutionary Game Theory Topic 20: Replicator Dynamics and the Hawk–Dove Game</p> <p><b>Assessments:</b> Final Exam</p>

## ATTENDANCE

1) Class attendance is required. Missing classes without permission will lead to decrease in overall grade.

Missing less than two classes: no penalty.

Missing more than two classes: 7% will be taken off from the overall grade.

If the instructor reports a student’s frequent missing of class to the Soochow University Academic Administration Office, the student might get a written warning and might be prohibited from attending final exam.



2) Participants in this course are expected to arrive in class promptly and adequately prepared. The primary objective of this course is to critically engage with the readings and the subject matter. Therefore, course participants are expected to have completed the reading prior to class and prepare thoughtful reflections/commentaries to share with fellow colleagues.

### **LEARNING REQUIREMENTS**

- 1) Late assignments are not acceptable and are subjected to grade deductions.
- 2) Assignments submitted in the wrong format will be counted as not submitted.
- 3) Failure to submit or fulfill any required course component results in failure of the class.
- 4) Make-up for midterm and final exams only with valid excuses, as defined by the University.
- 5) In order to earn a Certificate of Completion, participants must thoughtfully complete all assignments by stated deadlines and earn an average quiz score of 50% or greater.

### **TECHNOLOGY POLICY**

The use of electronic devices in class is distracting, both for the user and for the rest of the class. Only non-programmable calculators can be used in the tests and exam. Any attempts to use cell phones and other electronic communication devices will be seemed as cheating. Laptops are discouraged, unless you use them for activities DIRECTLY related to the course (eg., note taking, reading course documents).

### **ACADEMIC INTEGRITY POLICY**

Soochow University highly values the academic integrity and aims to promote the academic fairness, honesty and responsibility. Any academic dishonesty behaviors and any attempts to cheats and plagiarism will be reported to the university administration office. A written warning and the relevant penalties will be imposed. The record might be shown on the official university transcript.

### **DISABILITY ACCOMMODATION**



蘇州大學  
Soochow University

Soochow University is committed to maintaining a barrier-free environment so that students with disabilities can fully access programs, courses, services, and activities at Soochow University. Students with disabilities who require accommodations for access to and/or participation in this course are welcome.

Note:

Please contact the University 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.