

ECO 2102- 01, 02
Microeconomics II
SPRING 2023

Instructor: Dr. Swagata Bhattacharjee, Dr. Dhritiman Gupta

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Time and Location: Mon, Wed 11:50 (Section 1) and 3 (Section 2), location TBA

Office Hours: TBA

TA: TBA

TA Discussion Sections: TBA

Textbook:

- Strategy: An Introduction to Game Theory by Joel Watson (ISBN: 9788130915999)
- A Course in Game Theory by Osborne and Rubinstein (ISBN: 9788120351868)
- The main reference will be the **lecture slides** outlining the material, which will be uploaded weekly on Moodle.

About this course:

The course, the second one in the Microeconomics sequence, is an introduction to strategic reasoning. While Microeconomics I focused on single agent decision making, in this course we will explore strategic interactions when multiple economic actors make decisions and each one's action affects the others. Economists use the mathematical toolkit of Game Theory to study strategic interactions. The course will, therefore, equip you with the toolkit of game theory. We will cover complete information games and its applications in different contexts like firm competitions, auctions, public good provision, etc. Time permitted, we will also discuss the games of incomplete information and Bayesian learning.

Learning Outcomes:

The course will teach you one of the most widely used tool in modern microeconomics: game theory. You should be able to model real life situations using game theoretic reasoning and apply the logic.

Prerequisites:

Micro 1, Math for Economics

Grading Rubric: There will be weekly assignments, in-class (surprise) quizzes (part of class participation), two midterm exams and a final. They will count toward the grade as follows.

Assignments	15%
Class Participation	15%
Midterms	20% + 20%
Final	30%

We will use a mix of relative and absolute grading on a curve. The details are:

Percentile in Class	Grade
Top 10%	A
Top 10 – 20%	A–
Top 20 – 30%	B+
Top 30 – 50%	B
Top 50 – 55%	B–
Below 45	D–
Below 40	F

Homework Assignments are an important, indispensable part of the course. At the beginning of the semester, you will form study groups of 5. You are encouraged to work on the problem sets in study groups, but you should spend time thinking about them on your own as well. You will submit the assignments as groups. In addition, we will have some group activities during the course of the semester.

Attendance in lectures and active class participation is highly recommended. The in-class quizzes will *not be announced beforehand* and missed quizzes can not be taken at any other time.

Exams: TBA

Tentative Topics

(W= Watson)

Topics

1. Introduction. W: Ch 1
Decision Making Under Uncertainty
2. Normal form games (Strategic games). W: Ch 2 (p 30-32)
3. Mixed Strategies and Expected Payoffs. W: Ch 4
4. Best Response and Dominance. W: Ch 6.
5. Common Knowledge and Iterated Dominance. W: Ch 5, 7, 8 (p. 80-86)
6. Nash Equilibrium. W: Ch 9 (p. 92-96)
7. Oligopolistic competition, Cournot model, Collusion. W: Ch 10 (p. 107-109)
8. Bertrand model of price competition. W: Ch 10 (p. 109-111)
9. Electoral competition. W: Ch 8 (77-80)
10. Mixed Strategy Nash Equilibrium. W: Ch 11, p. 383-385
11. Introduction to Dynamic Games. W: Ch 2
12. Trees and Strategies in Dynamic Games. W: Ch 14
13. Subgame Perfect Nash Equilibrium. W: Ch 15
14. Centipede Game.
15. Stackelberg Model. W: Ch 16 (p. 180-182).
16. Ultimatum Game and Dictator Game. W: Ch 19 (p. 214-216)
17. Bargaining. W: Ch 16 (p. 216-220)
18. Finitely Repeated Games. W: Ch 22 (p. 257-262)
- Infinitely Repeated Games. W: Ch 22 (p. 263-266), Ch 23 (p. 275-277)
21. Auctions. W: Ch 27 (p. 323-327)
22. Incomplete Information Games. Bayesian Equilibria.
23. Information Economics: Adverse Selection. W: Ch 27 (p. 320-322)
24. Risk, Moral Hazard and Incentives in Contracting. W: Ch 25