

ECO 303.02: Intermediate Microeconomic Theory

Spring 2024

Instructor Information

Instructor: Siyuan Lyu

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Office Hours: Thursday 9:00 AM – 11:00 AM

Class Information

Dates: January 22, 2024 – May 4, 2024

ECO 303.02 Lecture

Time: Monday/Wednesday 2:30 PM – 3:50 PM

Classroom: Melville Library E4330

ECO 303.R03 Recitation

Time: Thursday 1:00 PM – 1:55 PM

Classroom: Frey Hall 317

ECO 303.R04 Recitation

Time: Thursday 2:30 PM – 3:25 PM

Classroom: Melville Library W4535

Course Description

The course introduces the concepts and tools of microeconomics following Introduction to Economics. In particular, the course analyzes problems faced by consumers, firms, and the market using mathematical induction. By the end of the course, the students could be able to apply the language and methods of modern economic theory to practical economic phenomena. The material included in the course is also helpful for upper-level economics courses. *Prerequisites:* C or higher in ECO 108; C or higher in MAT 125 or AMS 151.

Course Objectives

After this course, you should be able to...

- Understand the tools, concepts, and theories of microeconomics and apply them to certain economic problems.
- Understand the consumer's utility maximization problem and the related analysis. Derive the demand function.
- Understand the firm's profit maximization problem, cost minimization problem and the related analysis. Derive the supply function.
- Apply demand and supply theories to analyze the dynamics in competitive markets.
- Analyze monopoly behaviors and compare them with competitive markets.
- Understand the basic concepts of game theory and apply them to related problems.

Textbook and Calculators

Recommended Textbook: *Intermediate Microeconomics: A Modern Approach 8th Edition*, by Hal R. Varian. Any edition above 5 would work.

Calculator: You will need a scientific calculator to do the computations that will arise throughout the homework and exams. No specific calculator is required; however, a graphing calculator is not allowed during the exams.

Grading

The course grade is determined by the following components:

Midterm 1	25%
Midterm 2	25%
Homework	20%
Final Exam	30%

Grading Scale

Final grades will be assigned according to the following scale:

A	90 – 100	C	65 – 69
A-/B+	85 – 90	D	60 – 64
B	80 – 84	F	0 – 59
B-/C+	70 – 79		

Homework

There will be several problem sets as homework and I will post them one by one on **Brightspace**. You need to upload your solutions on the homework page on Brightspace. Homeworks are not required to be typed but are expected to be neatly done. You can either write your solutions on

paper and then take pictures or scan them with Apps such as CamScanner, or write/type them on your digital devices and upload the file. You can submit your homework several times before the deadline. Only the last submission will be graded. You are encouraged to work on homework in groups. However, you must turn in your own individual problem set for grading.

Exams

There are two midterms and a final exam. The midterms are non-cumulative, and the final is cumulative. You are expected to be present, seated, and ready to take the exam before the exam begins. **There will be no make-up exams.** All exams are closed books, closed notes, and only non-programmable calculators are allowed. In case of emergency or documented absence, contact your TA BEFORE the exam.

Student Accessibility Support Center Statement

If you have a physical, psychological, medical, or learning disability that may impact your course work, please contact the Student Accessibility Support Center, Stony Brook Union Suite 107, (631) 632-6748, or at sasc@stonybrook.edu. They will determine with you what accommodations are necessary and appropriate. All information and documentation is confidential.

Academic Integrity Statement

Each student must pursue his or her academic goals honestly and be personally accountable for all submitted work. Representing another person's work as your own is always wrong. Faculty is required to report any suspected instances of academic dishonesty to the Academic Judiciary. Faculty in the Health Sciences Center (School of Health Technology & Management, Nursing, Social Welfare, Dental Medicine) and School of Medicine are required to follow their school-specific procedures. For more comprehensive information on academic integrity, including categories of academic dishonesty please refer to the academic judiciary website at http://www.stonybrook.edu/commcms/academic_integrity/index.html.

Critical Incident Management

Stony Brook University expects students to respect the rights, privileges, and property of other people. Faculty are required to report to the Office of Student Conduct and Community Standards any disruptive behavior that interrupts their ability to teach, compromises the safety of the learning environment, or inhibits students' ability to learn. Faculty in the HSC Schools and the School of Medicine are required to follow their school-specific procedures. Further information about most academic matters can be found in the Undergraduate Bulletin, the Undergraduate Class Schedule, and the Faculty-Employee Handbook.

Tips for Success

- Be proactive about your success in the course.
- Attend every class and recitation.

- Ask questions whether it is during class, recitation, office hours, or via email to your instructor.
- Working together will help you and others better understand the course material as you can work through different difficulties and offer each other clarifications on concepts.
- Do problems. Reading through your notes is not enough. Seek out new problems and work through them carefully. When you are done, check your answer. If you are wrong, examine carefully what misunderstanding occurred and how to avoid it in the future. If you were correct, examine if there was a faster way, check to see if your solution ‘flowed’ and was easy to read, and think over what concepts/computations were used and what ‘type’ of the problem the exercise was.
- Every time you approach a new concept, carefully think how it could be applied in practical economic problems.

Important dates

Midterm 1: February 28th, 2:30 PM – 3:50 PM

Midterm 2: April 10th, 2:30 PM – 3:50 PM

Final: May 15th, 2:15 PM – 5:00 PM

All the exams are located in the same classroom as the lecture, Melville Library E4330 unless otherwise notified.

Tentative Schedule

The following is a *tentative* schedule for the course.

Week	Topics	Chapters in Varian
Week 1 (01/22, 01/24)	Introduction/Math Review	
Week 2 (01/29, 01/31)	Consumer Theory (I)	2-3
Week 3 (02/05, 02/07)	Consumer Theory (II)	4-5
Week 4 (02/12, 02/14)	Consumer Theory (III)	6,8
Week 5 (02/19, 02/21)	Theory of Demand	15
Week 6 (02/26, 02/28)	Review and Midterm 1	
Week 7 (03/04, 03/06)	Firm Theory (I)	18-19
Week 8 (03/11, 03/13)	Spring Recess (No class)	
Week 9 (03/18, 03/20)	Firm Theory (II)	20-21
Week 10 (03/25, 03/27)	Firm Theory (III)	22-23
Week 11 (04/01, 04/03)	Equilibrium	16
Week 12 (04/08, 04/10)	Review and Midterm 2	
Week 13 (04/15, 04/17)	Monopoly	24-25
Week 14 (04/22, 04/24)	Game Theory	28-29
Week 15 (04/29, 05/01)	Game Theory and Review	