Intermediate Microeconomics

ECON 100B, Summer Session I, 2024.

University of California San Diego.

Letter to the Student

Dear student,

Welcome to Econ 100B. This course continues the journey you began with Econ 100A, where you learned how consumers translate preferences into demand for goods, considering prices and income. In Econ 100B, we will focus on the supply side: how firms decide how much to produce and which inputs to use in the production process, considering costs and revenue. We will also explore the equilibrium of perfectly competitive markets, the gains participants receive from trading, and how some well-intentioned policies can sometimes do more harm than good. You should have passed econ 100A for this class and be familiar with differential calculus.

Class meetings

Lectures: Tuesday and Thursday 2:00pm-4:50pm, Warren Lecture Hall #2204.

Discussion Sessions: Wednesday 5:00pm-6:50pm, Warren Lecture Hall #2204.

SI Sessions: Tuesdays 5:00-6:20pm and Thursdays 6:00-7:20pm, Zoom (https://ucsd.zoom.us/j/96020700250).

Lectures and Discussions will be in person only, not recorded.

Teaching Team:

Instructor: My name is Jordi Martinez Muñoz (jom001@ucsd.edu). I'm a 5th-year PhD candidate in Economics. My research interests include behavioral and experimental economics, and I am currently working on a project investigating why people often give up on exploring unknown alternatives too soon. You can talk to me at the end of each lecture or during my office hours:

- **Thursdays, 5:00pm-6:00pm**, Atkinson #3803
- **Mondays, 7:00 pm – 8:00 pm** on Zoom (https://ucsd.zoom.us/j/8087766712)

TA: Alec Hoover (alhoover@ucsd.edu). Office hours: **Tuesday and Thursday 11:00am-12:00pm,** SDSC #E185.

Reader: Vafa Behnam Roudsari (vbehnamroudsari@ucsd.edu).

SI Leader: Katelyn Villamin (kvillamin@ucsd.edu).

Communication protocol: The official channels for material-related questions are lectures, discussion sessions, and office hours. Additionally, there is a discussion panel available on Canvas under the Discussion tab. Please reserve email communication for urgent administrative matters only. This approach helps with fairness, quality, and efficiency in our interactions. We will reply as soon as we can, but please be patient.

Class materials

Lectures: Your main source of information. Here, you'll have the opportunity (and are encouraged) to ask questions, clarify doubts, and engage with the material through various activities.

Lecture notes: A written version of the lectures.

Books: Books are supplements to the lectures and lecture notes. The official book is *Intermediate microeconomics with calculus: a modern approach. Varian, 2014* (Not provided through Canvas). Other recommended books are *Microeconomics* by Perloff and Nicholson's *Microeconomic Theory.*

Intermediate Microeconomics Video Handbook (IMVH): A set of videos created by the Economics Department at UCSD. I highly recommend you check them out!

TA Sessions and Office Hours: Weekly discussion sessions to review the class material and practice problem-solving. The TA and I will also offer office hours to support your learning process (see above).

Discussion board on Canvas: This is a great place to ask questions, share insights, and collaborate with your peers. We will monitor it often.

SI Sessions: Opportunity to engage with content, ask questions, and review lecture material with peers. Sessions are led by an advanced undergraduate student.

Organization of the class

This part of the journey is divided into five chapters. My goal as an instructor is for you to achieve certain skills and capabilities by the end of each chapter. Below is the map of this class: *(Soon I will link each chapter with the textbook chapters).*

Chapter 1: Technology. We study how economists understand the production process and its main characteristics.

By the end of this chapter, you will be able to:

- Define and identify key concepts of production technology in real-life situations.

- Compute the marginal product, marginal rate of technical substitution, returns to scale, degree of homogeneity, and technological progress for various production functions.

Chapter 2: Cost Minimization. We examine how firms decide the optimal amount of labor and capital to minimize the cost of achieving a given production plan.

By the end of this chapter, you will be able to:

- Distinguish between the short-run and the long-run in production decisions.
- Solve cost minimization problems for firms in the short and long run, using several optimization techniques.
- Identify the optimization techniques that apply to special families of production functions (linear and fixed proportions).
- Reflect on how technological progress and changes in the cost of capital can affect the demand for labor and impact workers.

Chapter 3: Profit Maximization in Perfect Competition. What does it mean for a market to be perfectly competitive? How do firms maximize their profits in a perfectly competitive market? Given output and input prices, what are the output and input demands that maximize profits?

By the end of this chapter, you will be able to:

- Identify and describe the main assumptions and implications of perfect competition both in words and quantitatively.
- Solve profit maximization problems for firms in perfect competitive markets.
- Describe the equivalence between the cost minimization and the profit maximization problems.
- Reflect on the implications of perfect competition on the power of individual sellers and compare it with other market structures where firms have more power.

Chapter 4: Partial Equilibrium and Welfare Analysis. Given demand and supply, what is the market equilibrium? How many firms produce when the market is at its long-run equilibrium, and how does the transition in the number of firms occur from the short to the long run? What gains do agents have by participating in a perfectly competitive market? Some policies are intended to fix unfair market equilibria, but can they?

By the end of this chapter, you will:

- Define and calculate the equilibrium price and quantity for given supply and demand functions.

- Calculate the firm's output and the market supply given the market demand and output and input prices.

- Calculate the number of firms in a perfectly competitive market equilibrium in the long run and describe the transition from the short to the long run.

- Define qualitatively and estimate quantitatively the notions of welfare in a market setting: consumer surplus, producer surplus, and total surplus.

- Describe qualitatively and estimate quantitatively the effects of different market policies (taxes, subsidies, and price controls) on the market outcomes and welfare.

Chapter 5: General Equilibrium. So far, we have described settings in which consumers and producers are different people. Typically, each of us both supply and demand different goods. How do we study these kinds of settings?

By the end of this chapter, you will:

- Describe how different market actors interact in a general equilibrium setting.

- Calculate equilibrium outcomes in a general equilibrium setting.

- Define Pareto efficiency and identify and calculate Pareto efficient equilibria and the theorems of welfare in economics.

- Distinguish between socially efficient and socially equitable market outcomes.

How will I assess your progress in this class?

The evaluation will consist of five items: One midterm exam, one final exam, quizzes, homework, and participation.

Participation	*20%*
Quizzes	*10%*
Homework	*10%*
Midterm Exam	*30%*
Final Exam	*30%*
Total	*100%*

Participation, 20%. After each class, I will ask you to answer a reflection question about how you feel about the material in terms of difficulty and interest. Participation also includes class polls and think-pair-share activities. All the activities are graded based on completion only. If you miss these activities, they cannot be made up, but you only need to complete 80% of them to receive full credit.

Quizzes, 10%. At the end of each class, you'll take a short quiz (one or two multiple-choice questions). If you miss a quiz, it cannot be made up, but your two lowest quiz grades will be dropped. Additionally, if your midterm exam grade is higher than your average quiz grade, your quiz grade will be replaced by your midterm exam grade (but not the other way around).

Homework, 10%. Most homework will consist of problem sets graded based on completion. The grader will check that you made an effort on the problems. Other types of homework may be included with specific rubrics. Please submit homework on time out of consideration for the graders. Late homework will be graded on a 70% maximum. Homework is due one week after it is assigned, and detailed instructions will be provided on the assignment day.

Midterm exam, 30%. The midterm exam will take place during the first 80 minutes of the lecture on July 18. If you miss the midterm, the 30% will be added to your final exam, making it worth 60% of your grade. I do not recommend missing the midterm unless absolutely necessary. There will be no make-up exam and no exceptions. The midterm covers content from the first four lectures, including the material made in substitution for the July 4th missed class.

Final exam, 30%. The final exam will cover all the material discussed in class.

Regrading policy: You can request a regrade within seven days of receiving your grade. Please revise the grading rubric carefully before submitting a regrade request.

Some useful information about the exams:

Both the midterm and final exams will include multiple-choice, fill-in-the-blank, and analytical problem-solving questions. The in-class activities, homework, and quizzes are designed to help you prepare for the exams. The exams are closed-book; no notes are allowed. You can bring a simple calculator and scratch paper. To succeed in the exams, it is important to have a good grasp of the material. Memorizing some tricks will help, but it is better if you focus on learning the mechanisms rather than just memorizing.

Important dates:

Drop without a “W” Deadline: July 12.

Midterm Exam: July 18, in class (first half of the class).

Drop with a “W” Deadline: July 19.

Final Exam: August 2, 3:00pm-5:50pm, place TBA.

Tentative schedule of topics

We have 10 sessions of 3 hours each. This is a tentative plan of how topics will be distributed among the classes:

Session	Topic
Session 1,July 2	Chapter 1 – Chapter 2
Session 2, July 4 **(No Class,** review the make-up material**)**	Chapter 1 – Chapter 2
Session 3, July 9	Chapter 2 – Chapter 3
Session 4, July 11	Chapter 3
Session 5, July 16	Chapter 3 – Chapter 4 (equilibrium)
Session 6, July 18	**Midterm (covers up to session 4) –** Chapter 4
Session 7, July 23	Chapter 4
Session 8, July 25	Chapter 4
Session 9, July 30	Chapter 5
Session 10, August 1	Chapter 5

Other

Disability Accommodations. Campus policy regarding disabilities requires that faculty adhere to the recommendations of the Office for Students with Disabilities (OSD). Any student eligible for and needing academic adjustments or accommodations because of disability should submit to me a letter from OSD describing appropriate adjustments or accommodations and should arrange to meet with me as soon as possible so that arrangements can be made in a timely manner. University policies regarding disabilities are available at http://disabilities.ucsd.edu/students/. Appointments with OSD (phone or in-person) can be made by calling 858.534.4382 or by email at osd@ucsd.edu. More information can also be found here.

Academic Integrity. Students who violate UCSD's academic integrity policy will earn a failing grade for the course. In addition, the Council of Deans of Student Affairs will impose a disciplinary penalty.

Religious Observance. Campus policy regarding religious observances requires that faculty make every effort to reasonably and fairly accommodate all students who, because of religious obligations, have conflict with scheduled examinations, assignments or required attendance. Please, let me know about a potential conflict as soon as possible so that we can reschedule the relevant assignment/examination.

Harassment Policy. The University Policy on Discrimination and Harassment applies to all students, staff and faculty. Any student, staff member or faculty member who believes that they have been the subject of discrimination or harassment based on race, color, national origin, sex, pregnancy, age, disability, creed, religion, sexual orientation, gender identity, gender expression, veteran status, political affiliation, or political philosophy, should contact the Office for the Prevention of Harassment and Discrimination (OPHD) at (858) 534-8298, ophd@ucsd.edu, or reportbias.ucsd.edu.

Data Privacy. The University adheres to the standards for student privacy rights and requirements as stipulated in the Federal Rights and Privacy Act (FERPA) of 1974, see http://ucsd.edu/catalog/front/ferpa.html.

Health and Well-Being. Throughout your time at UC San Diego, you may experience a range of issues that can negatively impact your learning. These may include physical illness, housing or food insecurity, strained relationships, loss of motivation, depression, anxiety, high levels of stress, alcohol and drug problems, feeling down, interpersonal or sexual violence, or grief. These concerns or stressful events may lead to diminished academic performance and affect your ability to participate in day-to-day activities. If there are issues related to coursework that are a source of particular stress or challenge, please speak with me, so that I am able to support you. UC San Diego provides a number of resources to all enrolled students, including:

- *Counseling and Psychological Services (858-534-3755 — caps.ucsd.edu)*
- *Student Health Services (858-534-3300 — studenthealth.ucsd.edu)*
- *CARE at the Sexual Assault Resource Center (858-534-5793 — care.ucsd.edu)*
- *The Hub Basic Needs Center (858-246-2632 — basicneeds.ucsd.edu)*

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I hope you enjoy this class!

Jordi