ECONOMICS 100A: MICROECONOMICS

Spring 2020, Zoom ID: 883-658-9887
Section A MWF 1:00-1:50
Section B MWF 2:00-2:50

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Office Hours: MWF 9:30-10:00

Discussion Sessions:

A01	W 5:00pm-5:50pm	B01	W 7:00pm-7:50pm
A02	W 6:00pm-6:50pm	B02	W 8:00pm-8:50pm

TAs	*Office Hours*	*Zoom ID*
Aleksandr Levkun (alevkun@ucsd.edu)	F 12pm-2pm	407 288 805
Daniel Acevski (dacevski@ucsd.edu)	M 6pm-8pm	373 035 655 (pswd: 037790)
Parker Rogers (parogers@ucsd.edu)	M 3:30pm-5:30pm	952-876-9733
Evgenii Baranov (evbarano@ucsd.edu)	Tu 7:00pm-9:00pm	632-246-1561
Yue (Luna) Zhang (yuz776@ucsd.edu)	Th 6:30pm-8:30pm	209-925-9615

Study Group Sessions: Mondays 9:00am-10:20 via Zoom 118943105; Victoria Zhou (xuz146@ucsd.edu)

Course Objectives: As the first class in the micro sequence, Econ 100A is designed to teach you how to set up, solve, and analyze optimization models and apply these mathematical models to the theory of the consumer (commodity demand, labor supply, and consumption/savings decisions). Finally, we will examine the fundamentals of decision making under risk and uncertainty.

Course Structure: The course will contain live lectures, pre-recorded lectures, and live practice sessions. All of the live sessions will be recorded and made available on Canvas. The detailed schedule posted on Canvas will outline the format of the next few lectures so you can plan ahead.

Required Texts:
(1) Perloff's Microeconomics: Theory and Applications with Calculus. The e-book is on our class web under Redshelf. The e-book costs $47 and you will have access for 4 years. You can use the e-book for free for two weeks. NOTE: this is an opt-out system: if you don't want the e-book, you must opt out or you will be charged for the book. This book will be used in 100B and 100C the following year, too. So, it costs $15.67 per quarter to use this book in intermediate micro!
Alternatively, you can use Varian's micro textbook: Varian, H. R. 2014. *Intermediate Microeconomics with Calculus.* W. W. Norton & Company, Inc.
(2) Mark Machina's Econ 100ABC Math Handout.

Web Resources: You are encouraged to take advantage of the following supplemental material for the 100ABC sequence, available free over the Internet.
(1) Martin Osborne's intermediate mathematics tutorial:
http://www.economics.utoronto.ca/osborne/MathTutorial/index.html
(2) Preston McAfee's Introductory textbook (this material is at a level between most microeconomics principles textbooks and Perloff's more advanced treatment.) http://www.introecon.com/

Weekly Homework: Each week, I will post practice problems on Canvas. They will not be graded. The best way to prepare for the exams is to form study groups and practice doing the problem sets together after you spent several hours working on them on your own. I will post the answers after the problems are reviewed in TA sessions.

The discussion session at 5pm will be live and will be recorded. Afterwards, the recording will be made immediately available on Canvas and the TA will be present on Zoom to answer your questions about the problems.

If you need guidance figuring out strategies on how to approach more challenging homework problems, you might find helpful Polya's Problem Solving Strateges (http://en.wikipedia.org/wiki/How_to_Solve_It) and visiting office hours.

Exams: We will have six tests in this class (including the final exam). The lowest score will be dropped, and the remaining five tests will carry equal weight of 20% each. All exams are closed book. While I will do what I can to keep to this structure of the assessments for this course, the evolving situation may make it necessary for me to make a change.

Academic Integrity: To protect academic integrity this quarter, we are likely using either Loom or Zoom. These programs use video and audio recording or other personal information capture for the purpose of facilitating the course and/or test environment. UC San Diego does not allow vendors to use this information for other purposes. Recordings will be deleted when no longer necessary. However, if cheating is suspected, the recording may become part of the student's administrative disciplinary record. Finally, I reserve the right to give an oral test if I feel it is necessary to uphold academic integrity.

Regrade Requests: You will have one week during which you can request a regrade of your exam. Your whole exam will be regraded, and your score can go up or down. You are allowed only one regrade request for the quarter. However, if you request is successful (your score goes up), you will get another regrade request.

Rough Schedule (the detailed schedule is posted on Canvas):

Week	Topic	Perloff (Varian) Chapter./ Math Handout Section	Video
1	Mathematical Review #1	Sections B and C	A1, A2
2	Consumer Preferences, Utility, Budget Constraint	3.1-3.3 (2-4)	C1, C2a
3	Mathematical Review #2	Sections D and E	A4
4, 5	Utility Maximization and Demand Functions	3.4, 4.1 (5, 6)	C2
6, 7	Comparative Statics of Demand	4.2, 4.3, 5.1 (8)	C3-C7
8	Supply of Labor	5.4 (9)	C8
9	Supply of Saving	15.2 (10)	C9
10	Decision Making Under Risk and Uncertainty	16 (12)	C10

Final (Sec. A – June 11th, 11:30; Sec. B – June 12th, 3:00)

FAMOUS OPTIMIZATION PROBLEMS IN ECONOMICS

Optimization Problem	Objective Function	Constraint	Control Variables	Parameters	Solution Functions	Optimal Value Function
Consumer's Problem	$U(x_1,...,x_n)$ utility function	$p_1 \cdot x_1 + ... + p_n \cdot x_n = I$ budget constraint	$x_1,...,x_n$ commodity levels	$p_1,...,p_n, I$ prices and income	$x_i(p_1,...,p_n,I)$ regular demand functions	$V(p_1,...,p_n,I)$ indirect utility function
Expenditure Minimization Problem	$p_1 \cdot x_1 + ... + p_n \cdot x_n$ expenditure level	$U(x_1,...,x_n) = u$ desired utility level	$x_1,...,x_n$ commodity levels	$p_1,...,p_n, u$ prices and utility level	$h_i(p_1,...,p_n, u)$ compensated demand functions	$e(p_1,...,p_n, u)$ expenditure function
Labor/Leisure Decision	$U(H,I)$ utility function	$I = I_0 + w \cdot (168 - H)$ budget constraint	H, I leisure time, disposable inc.	w, I_0 wage rate and nonwage income	$168 - H(w, I_0)$ labor supply function	$V(w, I_0)$ indirect utility function
Consumption/ Savings Decision	$U(c_1,c_2)$ utility function	$c_2 = I_2 + (1+i) \cdot (I_1 - c_1)$ budget constraint	c_1, c_2 consumption levels	I_1, I_2, i income stream and interest rate	$c_1(I_1, I_2, i), c_2(I_1, I_2, i)$ consumption functions	$V(I_1, I_2, i)$ indirect utility function
Long Run Cost Minimization	$w \cdot L + r \cdot K$ total cost	$F(L,K) = Q$ desired output	L, K factor levels	Q, w, r desired output and factor prices	$L(Q,w,r), K(Q,w,r)$ output-constrained factor demand functions	$LTC(Q,w,r)$ long run total cost function
Long Run Profit Maximization (in terms of Q)	$P \cdot Q - LTC(Q,w,r)$ total profit	none	Q output level	P, w, r output price and factor prices	$Q(P,w,r)$ long run supply function	$\pi(P,w,r)$ long run profit function
Long Run Profit Maximization (in terms of L and K)	$P \cdot F(L,K) - w \cdot L - r \cdot K$ total profit	none	L, K factor levels	P, w, r output price and factor prices	$L(P,w,r), K(P,w,r)$ factor demand functions	$\pi(P,w,r)$ long run profit function