ECONOMICS 100A: MICROECONOMICS

Fall 2015
Section A MWF 2:00-2:50, Solis 107
Section B MWF 3:00-3:50, Solis 107

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Office Hours: Tu 1-3 in Econ Bldg 111

TAs	Session place/time	Office, Office Hours
Sec. A: Jason Bigenho jbigenho@ucsd.edu	PETER 104; Tu 7:00p-7:50p	ECON 116; M 12:00-1:00
Sec. A: Jason Bigenho jbigenho@ucsd.edu	PETER 104; Tu 8:00p-8:50p	ECON 116; M 12:00-1:00
Sec. A: Wendy Zeng w5zeng@ucsd.edu	PETER 104; Th 7:00p-7:50p	ECON 127; Th 3:00-5:30
Sec. A: Erik Lillethun elilleth@ucsd.edu	PETER 104; Th 8:00p-8:50p	ECON 122; Th 8:30-11:00
Sec. B: Liz Hastings ehasting@ucsd.edu	PETER 104; W 4:00-4:50p	SH237; W 9:30-11:30
Sec. B: Halbert Mun hmun@ucsd.edu	PETER 104; W 5:00-5:50p	SH206; F 9:30-11:30
Sec. B: Xuan Ding x3ding@ucsd.edu	PETER 104; F 4:00p-4:50p	SH206; M 10:00-12:00
Sec. B: -- Rotating --	PETER 104; F 5:00p-5:50p	

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.

Required Texts:
(1) Varian, H. R. 2014. *Intermediate Microeconomics with Calculus.* W. W. Norton & Company, Inc.
(2) Mark Machina's Econ 100ABC Math Handout.

Video Handbook: The topics I cover in class are also explained in short video lectures from the *Intermediate Microeconomics Video Handbook*. The link to them is provided on Ted.

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 on Friday, I will post practice problems on Ted. 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. I will post the answers after the problems are reviewed in TA sessions.

Exams: Grading will be based on two midterms (25% each) and a final examination (50%). The final exam will be cumulative. You must take both midterms. All exams are closed book, and you may not use calculators and cell phones during the exams.

Regrade Requests: The TAs will give back the midterm exams in their discussion sections. By then, a solution to the exam would be posted on Ted. You can ask for a regrade <u>before you leave the room with your exam</u>. Your whole exam will be regraded, and your score can go up or down. If you don't think you have enough time to look at your exam after the section, you can pick up your exam from my office during my office hours the following week.

Schedule:

Week	Topic	Text Ch./ Math Handout Section	Video
1	Mathematical Review #1	Sections B and C	A1, A2
2	Consumer Preferences, Utility, Budget Constraint	2, 3, and 4	C1, C2a
	Midterm 1, October 19 at 8pm (Sec. A in Peter 108; Sec. B in Peter 110);		
3	Mathematical Review #2	Sections D and E	A4
4, 5	Utility Maximization and Demand Functions	5 and 6	C2
6, 7	Comparative Statics of Demand	8	C3-C7
	Midterm 2, November 23 at 8pm (Sec. A in Peter 108; Sec. B in Peter 110);		
8	Supply of Labor	9	C8
9	Supply of Saving	10	C9
10	Decision Making Under Risk and Uncertainty	12	C10
	Final (Sec. A – December 9, 3:00-5:00; Sec. B – December 11, 3:00-5:00)		

FAMOUS OPTIMIZATION PROBLEMS IN ECONOMICS

Optimization Problem	Objective Function	Constraint	Control Variables	Parameters	Solution Functions	Optimal Value Function
Consumer's Problem	$U(x_1,\ldots,x_n)$ utility function	$p_1 \cdot x_1 + \ldots + p_n \cdot x_n = I$ budget constraint	$x_1,\ldots,x_n$ commodity levels	$p_1,\ldots,p_n, I$ prices and income	$x_i(p_1,\ldots,p_n,I)$ regular demand functions	$V(p_1,\ldots,p_n,I)$ indirect utility function
Expenditure Minimization Problem	$p_1 \cdot x_1 + \ldots + p_n \cdot x_n$ expenditure level	$U(x_1,\ldots,x_n) = u$ desired utility level	$x_1,\ldots,x_n$ commodity levels	$p_1,\ldots,p_n, u$ prices and utility level	$h_i(p_1,\ldots,p_n, u)$ compensated demand functions	$e(p_1,\ldots,p_n, u)$ 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