ECONOMICS 100A: MICROECONOMICS

Fall 2016   **Maxim Sinitsyn, msinitsyn@ucsd.edu**
Section B MWF 12:00-12:50, CENTR 115   **Office Hours: Tu 1-3 in Econ Bldg 111**
Section C MWF 1:00-1:50, CENTR 115

TAs	Session place/time	Office, Office Hours
Sec. B: Jason Bigenho	CENTR 222; W 1:00p-1:50p	ECON 116; M 4:30p-7:30p
jbigenho@ucsd.edu		(held on Oct 17; Nov 14)
Sec. B: Wendy Zeng	CENTR 222; W 2:00p-2:50p	ECON 127; Th 1:00p-4:00p
w5zeng@ucsd.edu		(held on Oct 13; Nov 10)
Sec. B: Dodge Cahan	CENTR 222; W 3:00p-3:50p	ECON 128; Th 8:30a-11:30a
dcahan@ucsd.edu		(held on Oct 13; Nov 10)
Sec. C: Xuan Ding	CENTR 222; F 3:00p-3:50p	SH 206; M 1:00p-4:00p
x3ding@ucsd.edu		(held on Oct 17; Nov 14)
Sec. C: Alexandre Kellogg	CENTR 222; F 4:00p-4:50p	SH 208; M 9:00a-12:00p
adkellog@ucsd.edu		(held on Oct 17; Nov 14)
Sec. C: Erik Lillethun	CENTR 222; F 2:00p-2:50p	ECON 122; M 8:30a-11:30a
elilleth@ucsd.edu		(held on Oct 17; Nov 14)

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.

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 midterm exams will be given back after your discussion sessions. You can ask for a regrade before you leave the room with your exam. 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 session, you can pick up your exam from my office during my office hours.

Problem Solving and Economics Tutoring Center (PSET): Learn to solve problems on you own! The Economics Department is making a problem solving and tutoring center available to all students in intermediate microeconomics (100ABC) on M-TH evenings and on the weekend. (Specific hours for PSET will be posted on the Department web page). The ability to apply the concepts from class to solve problems is the most important skill we want you master in our core classes. PSET is designed to help you learn to tackle problems successfully by having grad and undergrad TAs there to help you think through a problem—right when you get stuck.
If you struggle to tackle your homework, we believe that PSET will be an efficient and effective way for you to learn how to think like an economist.

Easter Egg: I planted an intentional mistake into the solution of one of the problems in one of the problem sets. This is a significant conceptual error and not a typo. The first student to find this mistake and successfully explain to me why the solution is wrong (during my office hours) as well as offer the correct solution will see his/her score for the final multiplied by 1.2.

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 (8:00pm-8:50pm in GH 242);		
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 16 (8:00pm-8:50pm in GH242);		
8	Supply of Labor	9	C8
9	Supply of Saving	10	C9
10	Decision Making Under Risk and Uncertainty	12	C10
	Final (Sec. B – December 8, 11:30-1:30 in ???; Sec. C – December 5, 11:30-1:30 in ???)		

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