ECONOMICS 100A: MICROECONOMICS

Fall 2013
Section A: MWF 11:00-11:50, Center Hall 212
Section B: MWF 12:00-12:50, Center Hall 212

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Office Hours: Th 2-4 in Econ Bldg 111

TAs	Session place/time	Office, Office Hours
Sec. A: Matt Goldman mrgoldman@ucsd.edu	PCYNH 121; M 8:00p-8:50p	ECON 112; F 11:30-1:30
Sec. A: Andrew Chamberlain adchamberlain@ucsd.edu	PCYNH 121; W 6:00-6:50	SH 231; Th 9:00-11:00
Sec. B: Yoshiyuki Miyoshi ymiyoshi@ucsd.edu	PCYNH 121; W 8:00a-8:50a	SH 228; T 1:00-3:00
Sec. B: Jungbin Hwang j6hwang@ucsd.edu	PCYNH 121; W 4:00-4:50	SH 205; W 9:00-11:00

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) Perloff, Jeffrey M. (2013) *Microeconomics: Theory and Applications with Calculus, 3rd edition*. Pearson/Addison-Wesley.
(2) Mark Machina's Econ 100ABC Math Handout.

There is also a Soft Reserve Package which contains the Math Handout, practice problems, and old exam questions.

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 three midterms (17% each) and a final examination (49%). The final exam will be cumulative. You must take all three midterms. All exams are closed book, and you may not use calculators and cell phones during the exams.

Regrade Requests: I will give back the midterm exams in class. 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 class, you can pick up your exam from my office during my office hours.

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) will see his/her score for the final multiplied by 1.1. The first student to offer the correct solution gets the same deal.

Schedule:

Week	Topic	Text Ch./Math Handout Section
1	Mathematical Review #1	Sections B and C
2	Consumer Preferences, Utility, Budget Constraint	3.1, 3.2, and 3.3
	Midterm 1, October 18; 5:00pm-5:50pm; Peterson 108	
3	Mathematical Review #2	Sections D and E
4, 5	Utility Maximization and Demand Functions	3.4 and 4.1
	Midterm 2, November 8; 5:00pm-5:50pm; Peterson 108	
6, 7	Comparative Statics of Demand	4.2, 4.3, and 5.1
	Midterm 3, November 22; 5:00pm-5:50pm; Peterson 108	
8	Supply of Labor	5.5
9	Supply of Saving	15.4
10	Decision Making Under Risk and Uncertainty	16.1, 16.2, 16.3, and 16.4
	Final (Sec. A – December 10, 11:30-1:30; Sec. B – December 12, 11:30-1:30)	

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