ECONOMICS 100A: MICROECONOMICS

Spring 2017
Section A MWF 2:00-2:50, PETER 108
Section B MWF 3:00-3:50, PETER 108

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Office Hours: Tu 2-4 in Econ Bldg 111

Discussion Sessions (no sessions first week):

A01	WLH 2204; M 5:00pm-5:50pm	B01	PETER 103; W 4:00pm-4:50pm
A02	WLH 2204; M 6:00pm-6:50pm	B02	PETER 103; W 5:00pm-5:50pm
A03	WLH 2204; M 7:00pm-7:50pm	B03	PETER 103; Th 7:00pm-7:50pm
A04	WLH 2204; W 5:00pm-5:50pm		

TAs (Office Hours in PSET lab, see below)

Jason Bigenho (jbigenho@ucsd.edu)
Dodge Cahan (dcahan@ucsd.edu)
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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.

100AH: If you earn an A/A- grade in my class this quarter, I recommend that you take the one-unit honors class 100AH in the fall. Honors classes are capped at 20 students and you will get to know the faculty member well (important for getting letters of recommendation). These classes typically have you give a short presentation and write a short paper. Presenting and writing in the major are two valuable skills that are challenging for us to offer in large classes. I recommend you take advantage of the 100AH opportunity.

100A Problem Solving and Economics Tutoring Lab (PSET): Undergraduate and graduate TAs will be available to answer your questions in Econ 200 most evenings and on Sunday. In Econ 200 there is room for you to work on your homework and get your questions answered if you get stuck. We hope to offer PSET on MTWTh from 5:30-9:30pm and Sunday 2-6pm but please check the web page for actual hours: http://economics.ucsd.edu/undergraduate-program/courses/pset-lab.html)

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, April 28th (5:00-5:50 in PETER 108 and 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, May 26th (5:00-5:50 in PETER 108 and 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 – June 16th, 3:00-5:00; Sec. B – June 14th, 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	$U(x_1,...,x_n)$ 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