

# ECONOMICS 100C: MICROECONOMICS

Spring 2015  
MWF 9:00-9:50, CENTR 113

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Office Hours: Tu 2-4 in Econ Bldg 111

TA	Session place/time	Office, Office Hours
Seung-Keun Martinez <a href="mailto:sem012@ucsd.edu">sem012@ucsd.edu</a>	CENTR 105; Tu 7:00p-7:50p CENTR 105; Tu 8:00p-8:50p	SH236; F 11-1

*Course Objectives:* Econ 100C examines departures from the neoclassical model including imperfect competition, strategy, asymmetric information, and signaling.

*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:* 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.

*Schedule:*

Week	Topic	Textbook Chapter	Video
1	Review of Perfect Competition, Government Intervention in the Market	16	E.2
2	Monopoly	25	G.1
3	Pricing	26	G.2
<b>Midterm 1, April 17;</b>			
4, 5	Game Theory	29, 20	F
6, 7	Oligopoly	28	G.3
<b>Midterm 2, May 22;</b>			
8	Externalities	35	H.1
9	Public Goods	37	H.2
10	Asymmetric Information	38	I
<b>Final (June 10, 8am-10am)</b>			

# FAMOUS OPTIMIZATION PROBLEMS IN ECONOMICS

Optimization Problem	Objective Function	Constraint	Control Variables	Parameters	Solution Functions	Optimal Value Function
<b>Consumer's Problem</b>	$U(x_1, \dots, x_n)$ utility function	$p_1 \cdot x_1 + \dots + p_n \cdot x_n = I$ budget constraint	$x_1, \dots, x_n$ commodity levels	$p_1, \dots, p_n, I$ prices and income	$x_i(p_1, \dots, p_n, I)$ regular demand functions	$V(p_1, \dots, p_n, I)$ indirect utility function
<b>Expenditure Minimization Problem</b>	$p_1 \cdot x_1 + \dots + p_n \cdot x_n$ expenditure level	$U(x_1, \dots, x_n) = u$ desired utility level	$x_1, \dots, x_n$ commodity levels	$p_1, \dots, p_n, u$ prices and utility level	$h_i(p_1, \dots, p_n, u)$ compensated demand functions	$e(p_1, \dots, p_n, u)$ expenditure function
<b>Labor/Leisure Decision</b>	$U(H, I)$ 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
<b>Consumption/Savings Decision</b>	$U(c_1, c_2)$ 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
<b>Long Run Cost Minimization</b>	$w \cdot L + r \cdot K$ 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
<b>Long Run Profit Maximization</b> (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
<b>Long Run Profit Maximization</b> (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