ECONOMICS 100B: MICROECONOMICS

Winter 2018 **Maxim Sinitsyn, msinitsyn@ucsd.edu**
MWF 12:00-12:50, CENTR 216 **Office Hours: T 2-4 in Econ 111**

Discussion Sessions:
A01 MANDE B-150; Tu 7:00pm-7:50pm
A02 MANDE B-150; Tu 8:00pm-8:50pm

TA (Office hours in PSET lab, see below)
Remy Levin (rzlevin@ucsd.edu)

Course Objectives: Econ 100B analyzes the theory of the firm and markets when there is price taking behavior. Topics include the theory of production, commodity supply and input demand in competitive markets, and competitive market equilibrium.

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, I will post practice problems on TritonEd. 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 notes, 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 regarded, 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.

100B 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 and on Sunday, but please check the web page for actual hours: http://economics.ucsd.edu/undergraduate-program/courses/pset-lab.html).

Supplemental Instruction (SI) is a peer-led study group program that targets difficult classes. High achieving students who have previously taken the course or have strong content knowledge related to the course run the study sessions outside the classroom. The SI Leader facilitates the session in a way to help you work with the content and collaborate with peers who are taking the course as well.

SI works — data indicates that students who take advantage of SI earn better grades. In fact, 95% of the students who attended four or more SI sessions earned a higher grade in their courses and overall GPA (per data on SI support for Calculus and pre-Calculus at UC San Diego).

Supplemental Instruction Overview

- Involves weekly study sessions (3 per week) run by highly trained SI student leaders
- Targets high-risk courses
- Includes your instructor in the process
- SI Leader is in class each day with you

Supplemental Instruction is a key way to support your learning in this course. The peer-to peer interactions provides you (the student) with a session to explain, explore and elaborate what you know. Simultaneously, it allows you (the student) to clarify what you might struggle to understand.

SI schedule:

Monday 3pm	Center 316
Wednesday 2pm	Center 316
Friday 4pm	TLC 1504

Schedule:

Week	Topic	Textbook Chapter	Video
1, 2	Theory of Production	Ch. 19	D1
	Midterm 1, February 2		
3, 4	Theory of Cost	Ch. 22	D2
5, 6	Profit Maximization and Supply Under Perfect Competition	Ch. 23	D3
	No class on Friday, March 2		
	Midterm 2, March 5		
7	Demand for Factors of Production;	Ch. 16	E1
8	Equilibrium, Dynamics & Comparative Statics of Perfectly Competitive Markets		
9. 10	General Equilibrium	Ch. 32	E2
	Final, March 21, 11:30-1:30, TBA		

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