

DePaul University
ADVANCED MICROECONOMICS - ECON 505
Fall 2020

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Contacting the Professor:

I am available during my office hours, which we will run each Monday evenings from 6:00 to 7:00pm (via Zoom). These Zoom sessions should be reserved primarily for working in small groups (“Breakout Rooms”) to work on the classroom exercises and other questions dealing with the weekly lectures. In addition, you can email with questions at any time. I will return your email within 24 hours.

Required text: Jeffery Perloff, Microeconomics Theory and Applications with Calculus, (5th Edition), Boston: Pearson, ISBN 10: 0-13-518377-4; 2020

Course Description:

This course gives an overview of the theories and techniques used in the economic analysis of the household/consumer, along with an introduction to the theory of the firm. The course is fairly rigorous and mathematical, so I strongly suggest that the student dust off their calculus hats. We will work through Perloff very slowly.

This course is an asynchronous online course with weekly Zoom sessions during office hours. Since it is asynchronous, you can progress at your own pace, however be aware of the deadlines for the weekly assignments. You must have sufficient computing capability along with a reliable internet connection to access course content and interact with me and your fellow students. This includes an active email account that you have initiated through Campus Connect and that you check regularly. Finally, to scan and submit your assignments and exams, you will need the ability to create pdf files (which you will submit to D2L via the Submissions tab).

Course Prerequisites:

The student is expected to be sufficiently proficient in math.¹ We will use calculus extensively throughout this course. You are expected to have participated in the Department’s Math Bootcamp. In addition, Alpha Chiang’s Mathematical Economics text is an excellent Mathematical Economics text. Finally, Binger and Hoffman’s Microeconomics with Calculus is an excellent text on Microeconomics. Both of these texts are on virtual reserve in the Loop Library. A hardcopy of my lecture notes are also included in D2L.

Learning Outcomes:

As the result of successful participation in this course, students will be able to **show their understanding of rational economic behavior**. Students will be able to derive and solve the first-order conditions of constrained utility maximization, constrained expenditure minimization, cost minimization, and profit maximization. Microeconomics covers optimal behavior from the perspective of both the household as well as the firm. Students will be able to demonstrate their comprehension of these basic models by recognizing how real-world cases and examples relate to

¹ The level of mathematics used in this course is equivalent to Mathematics for Economists (ECON 380). Be sure you have taken this course (and/or have taken the mathematics boot camp taught in August), or you will have a difficult time in this course.

optimal behavior. For example, the students will be able to apply the economics of uncertainty to Gary Becker's model of criminal behavior.

Grading Policy:

Both exams (Midterm and Final) will be weighted 35% in determining the grade, with the remaining 30% allocated to weekly homework. Please note that the Final Exam is NOT cumulative. Included in the Handouts tab in D2L are review questions for the Midterm and Final Exams – the student would be well advised to be able to answer these questions to be fully prepared for the exams. Grades on exams will be curved slightly according to the class performance; however, the grade cutoffs will not deviate much from the traditional 90%, 80%, etc. grade threshold. Late assignments will not be accepted, as the answers will be posted by Wednesday morning. Your grades will be updated regularly on D2L in the Grades tab.

Weekly Assignments:

The student will submit their weekly home works into the Submission tab in D2L. The deadline will be Tuesday nights at 11:59pm. No late assignments will be accepted. I will post the answers to these homeworks by Wednesday mornings.

Course Calendar:

WEEK #	START/END	ASSIGNMENT DUE
1	Start	Math Review and Consumer Preferences
	End	Due Sept. 15
2	Start	Consumer Demands
	End	Due Sept. 22
3	Start	Elasticity and Laws of Demand
	End	Due Sept. 29
4	Start	Market Demand and Economics of Uncertainty
	End	Due Oct. 6
5	MIDTERM EXAM	Due Oct. 13
6	Start	Social Surplus
	End	Due Oct. 20
7	Start	Pure Exchange and Welfare Theorems
	End	Due Oct. 27
8	Start	Production Theory
	End	Due Nov. 3
9	Start	Cost Theory
	End	Due Nov. 10
10	Start	Competitive Behavior
	End	Due Nov. 17
11	FINAL EXAM	Due Nov. 24

Course Organization:

The primary learning unit in an asynchronous online course is the week. Each quarter has 11 weeks, including Finals Week. Week 1 begins on Wednesday, Sept. 9 (2020) and ends on Tuesday, Sept. 15 -- thus Homework #1 is due Tuesday, Sept 15 by 11:59pm; Week 2 begins on Wednesday, Sept. 16 and ends on Tuesday, Sept. 22 -- thus Homework #2 is due Tuesday, Sept. 22

by 11:59pm; etc. The Midterm exam will be distributed in Week 5 on Wednesday, Oct. 7 and is due on Tuesday, Oct. 13 by 11:59 pm. The Final exam will be distributed on Wednesday Nov. 18 and is due Tuesday Nov. 24 by 11:59 pm. **Week 0 is included for you to prepare for the technical aspects of the courses. Homework Week 1 covers this material.**

Weekly Office Hours:

Every Monday night from 6:00pm to 7:00pm, I will open a Zoom session to provide an opportunity for you to ask me questions about the course, the schedule, etc. More important, during this hour-long session, we will work on the week's Classroom Exercises (see D2L). These weekly Classroom Exercises will be helpful in completing your weekly Homework Assignments, as well as solidify your understanding of the weekly topic. I strongly recommend that you attend these weekly synchronous sessions.

How to Take an Online Course

Students are about equally divided between a preference for traditional, face-to-face instruction versus online instruction. Surveys show that the primary advantage of an online course is the flexibility it provides, allowing the student to engage in the topic at their own pace and schedule. This, however, is also one of the primary drawbacks of online courses – time management. The student thinks that he/she has until Tuesday night at 11:59pm to get an assignment done, and when Tuesday night comes along, they haven't done the required readings or watched the lectures to be able to complete the assignment. Let's face it: life gets in the way!

This suggests to me a couple of critical strategies that will help you in learning the material for this course. Without a doubt, this is a heavy course in advanced microeconomic theory, with lots of mathematics and analytical logic. I have broken the course into weekly topics, with topic broken into shorter "snippets" of perhaps 15-25 minutes each. Listen to, and follow along with, the recorded snippets. After each snippet, stop and think about what was just discussed. At the end of each weekly topic, you will have a Classroom Exercise, which we will review during my weekly Zoom office hours. The student will then complete a weekly homework assignment which will be submitted into the "Submission" tab in D2L. This assignment is due by 11:59pm on that Tuesday.

The Midterm and Final Exams will be available at the beginning of Week 5 and 11 respectively. Both exams are to be submitted through the "submission" tab in D2L by the following Tuesday night at 11:59pm.

Discussion Room: I have created a discussion room in D2L for students to chat together. Students should participate in this discussion room as one source of answers to their questions. I will monitor this room and respond when needed.

Remember the five core rules of Netiquette:

1. **Do unto others as you would have others do to you** – before you press "send" or "submit," ask yourself "would I be OK with this if someone else had written it?"
2. **Adhere to the same standards of behavior online that you follow in real life**
3. **Know where you are in cyberspace** – one type of communication in one area may not be appropriate in another
4. **Respect other people's time and bandwidth** – most people are busy and cannot read or respond to frivolous emails or discussion posts
5. **Make yourself look good online** – you will be judged by the quality of your writing, so always check for spelling and grammar errors, state yourself clearly, be pleasant and polite, be forgiving for other people's mistakes

Academic Integrity:

The student is expected to uphold all of the conditions outlined in the Student Handbook regarding academic integrity. All work must adhere to the University Academic Integrity Policy

(see the Student Handbook, or visit <http://academicintegrity.depaul.edu> . Please be aware that any work hand in can be checked through Turnitin technology.

Center for Students with Disabilities

DePaul University is committed to providing students with disabilities equal access to DePaul's educational and co-curricular opportunities so that students may fully participate in the life of the university. The Center for Students with Disabilities (CSD) services are available to students with diverse physical, learning, medical, mental health and sensory disabilities. The Center offers supports to students to achieve their academic goals while promoting their independence. CSD is a resource to the many university departments that share the responsibility of supporting the members of our diverse learning community. For more information, call 312-362-8002/773-325-1677 or email csd@depaul.edu .

Student Evaluations

At the end of this course, you will have the opportunity to evaluate this course and the effectiveness of the instructor. This feedback is extremely valuable to DePaul as it allows us to adjust those teaching moments which were, or were not, effective. Please take this task seriously and give your honest opinion about what you found good and bad about this course.

MATHEMATICAL ECONOMICS

TOPIC	READINGS	D2L HANDOUTS	Detailed topics
WEEK 0: Math boot camp Review of Math; STATA	Chiang Ch. 6-12	HDT -Rules of Calculus HDT – Mansfield B-2 Bomber blunder HDT – Chiang Homogeneous Fcn.	Rules of differentiation; FOC; Unconstrained and constrained optimization; Cost/benefit analysis; Homogeneous fcn. (esp. Cobb-Douglas)
THEORY OF THE CONSUMER			
WEEK 1: Consumer Preferences; Equilibrium	Perloff - Ch. 3	CRE - Cobb Douglas Utility Fcn.	Commodity Space; Consumer's preferences (notation, Debreu's existence theorem, cardinal vs. ordinal); Indifference curves; MRS; Constrained utility maximization (geometric vs. LaGrangian);
WEEK 2: Consumer Demand; Marshallian vs Hicksian Demand	Perloff - Ch. 4	HDT - Primal and Dual Problem CRE – Marshallian Demand	Engel Curves; Cross-price demand fcn.; Own-price demand (Marshallian) fcn. (X^M); $SE + IE = TE$; Primal vs. Dual problem; Compensated (Hicksian) demand fcn. (X^H)
WEEK 3: Individual's demand elasticities; Laws of demand	Layard & Walters (pp. 133-43)	HDT -Elasticity Notation CRE - Elasticity and Laws of Demand HDT –Laws of Demand and Elasticity CRE	Elasticity definition & formula; Laws of demand
WEEK 4: Market Demand; Behavior under Uncertainty	Perloff - Ch. 16	CRE – Market Demand and Uncertainty	von Neumann-Morgenstern utility fcn.; Expected utility; Attitude towards risk; Why buy insurance?; Criminal Behavior
		HDT - Midterm Review Questions	
MIDTERM –due 10/13/20 by 11:59pm			

WEEK 6 – 8: WELFARE ECONOMICS			
TOPIC	READINGS in B&H	D2L HANDOUTS	Detailed topics
WEEK 6: Social Surplus, Pareto vs Kaldor-Hicks	Perloff – Ch 5	CRE – Social Surplus	Consumer vs Producer Surplus; Pareto Principle; Kaldor-Hicks
WEEK 7: Pure Exchange; Competitive Equilibrium; Welfare Theorems	Perloff – Ch. 10 SEE LECTURE NOTES	HDT - Solving Comp. Equil for Pure Exchange CRE – Pure Exchange and Welfare Theorems	Pure Exchange Economy; Edgeworth Box; Gains from Trade; Contract Curve is Pareto Optimal (PO); Competitive Equilibrium (CE); tatonnement process; Two Welfare Theorems
THEORY OF THE FIRM			
WEEK 8: Intro to Firm Production Theory		HDT - CEO Compensation HDT - Production Function CRE – Production Theory	Objective of the Firm; Technology in SR (and the TPL) versus LR (isoquants, MRTS)
WEEK 9: Cost Theory	Perloff - Ch. 6 & 7	CRE – Cost Theory	cost minimization and cost functions
WEEK 10: Perfect Competition	Perloff - Ch. 8 & 9	CRE – Competitive Behavior	Competitive Output and profits (LR vs. SR); Input Demand; Market equilibrium
		HDT - Final Exam Review Questions	
FINAL EXAM – due 11/24/20 by 11:59pm			

Note: Chiang = Alpha Chiang's textbook (on reserve)
CRE = Classroom Exercise in D2L
HDT = Handout in D2L