

Introduction

This course will develop the theoretical background you need for all of your future economics courses. You will be exposed to how consumers, producers, and the government make decisions subject to constraints with the goal of maximizing their objective function (e.g., utility, profit, or social welfare).

Note: succeeding in microeconomics requires a strong understanding of algebra and calculus.

Contact Information

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Course Organization

Block 1: Math WRIT, Consumer Theory, PS1, PS2, PS3, & WPR 1

Block 2: Producer Theory & Perfect Competition, PS4, PS5, PS6, & WPR 2

Block 3: Market Power, General Equilibrium, PS7, Article Summary, & PS8

Course Grade

Math WRIT: 5%

Problem Set Completion: 10%

Problem Set Quizzes: 20%

WPRs (2): 17.5% Each

Article Summary: 5%

TEE: 25%

* All WPRs/WRITs/TEE will be closed book. If you will miss a Quiz/WPR/WRIT/TEE for any reason, you must notify the instructor **72 hours prior** and make up the test before the assigned day. If you fail both WPRs and the TEE, we will recommend to the department head that you fail the course. If your TEE grade is below a 50%, we may also recommend to the department head that you fail the course.

Electronic Devices

All electronic devices (to include phones, laptops, tablets) are prohibited in the classroom. Leave them in your bag **outside** the classroom.

How to Succeed in this Course

1. Come to class prepared, having devoted some thought to the lesson ahead of time and having reviewed material from the previous class.
2. While reading the textbook is important, completing example problems from the textbook, old problem sets, and old WPRs/WRITs is the most effective way to ensure you are able to apply the concepts you are learning. Memorization will have little value in this course.
3. Do not free ride off your classmates for the problem sets. Try to solve problems on your own before asking your instructor or classmates for help. You will be very disappointed in your knowledge of the material when you arrive at the exam if you have not done the problems on your own.

Textbook / Readings

Nicholson, Walter and Christopher Snyder. Microeconomic Theory: Basic Principles and Extensions. Twelfth Edition. South-Western, Cengage Learning, 2017.

Examples

The syllabus lists examples for each class. These are solved problems in the textbook. I recommend you review these prior to class and also review the problems from the previous class to solidify your understanding of the material.

Problem Sets

Problem sets are meant to be challenging. You may work together on them, but you must turn in your own assignment and properly cite any assistance you receive. Problem sets will be reviewed during class and graded for completion only. In addition, at the beginning of each class where a problem set is due, you will take a quiz that focuses on the most important topic from the problem set.

If you turn in the problem set late, you will take the problem set quiz, but you will not be allowed to attend the remainder of the class on that day and you will receive a 10% deduction on your problem set completion grade. After that, you will receive 10% deductions on your completion date for each additional day that your problem set is late.

Article Summary

You will write a short summary (no more than 1,000 words) of an article from the Journal of Economic Perspectives (topic of your choosing) and submit it on 15 APR 20 (Lesson 27). Journal article titles will be submitted to the Section Marcher NLT 6 APR 20 (Lesson 24) to ensure no more than two cadets choose the same article. Your summary must highlight how the article applies material from the course. The paper needs to be both economically sound and well-written. Ten percent of your grade will be deducted for each day that the paper is late. The following website is a good reference: <https://www.aeaweb.org/journals/jep/classroom>.

TEE

The TEE is a comprehensive exam covering the entire semester. The best way to study for the TEE is to review/re-do your problem sets and WPRs/WRITs. As on the WPRs and problem sets, there will be problems you have not solved previously; however, throughout the course, you have learned the tools to answer these problems, and this is the chance to apply them.

Day 1 Class Schedule

As our class will be 75 minutes and meeting on Day 1s, we will only have class for 30 out of the 40 scheduled Day 1s (the class date for each lesson is listed below). It is your responsibility to stay on top of the schedule and any updates that may be made during the course of the semester. Confusion about the schedule is not an acceptable excuse for a class absence.

LESSON DAY 1**BLOCK 1: CONSUMER THEORY****GRADED
EVENT**

- 1 **8-Jan Introduction to Microeconomics and Models**
 Read: 21-33; Examples: 2.1, 2.2, 2.3, 2.5
 Lesson Objectives:
 1. How do people respond to incentives, weigh costs and benefits on the margin, and optimize given constraints?
 2. Review algebra and calculus

- 2 **10-Jan Math for Microeconomics Review**
 Read: 34-45; 48-53, 58-62; Examples: 2.7, 2.8, 2.10, 2.13
 Lesson Objectives:
 1. Solve unconstrained optimization problems with calculus.
 2. How do you use the Lagrange multiplier method to solve constrained optimization problems?
 3. Why do we check second order conditions?

Stand Down Day (No Classes on 14 Jan 20)

- 3 **15-Jan Consumer Preferences & Indifference Curves**
 Read: 58-62; Example: 2.13; Read p. 89-92; Read: 87-101;
 Lesson Objectives:
 1. What are the properties of consumer preferences and economic rationality?
 2. What is a utility function? What are its main properties?
 3. How do indifference curves depict consumer preferences? What are their properties?

**Math for
Economics
WRIT (25
min)**

MLK Day (No Classes on 20 Jan 20)

- 4 **17-Jan Types of Utility Functions and Budget Constraints**
 Read: 99-107; Example: 3.3; Read 117
 Lesson Objectives:
 1. Can you calculate the marginal rate of substitution? What
 2. What are the differences between perfect substitutes, perfect complements, and imperfect substitutes?
 3. How does a positive monotonic transformation affect the slope of an indifference curve?
 4. Be able to mathematically express and depict a consumer's budget constraint.

- 5 **23-Jan Constrained Consumer Choice - building demand curves!**
 Read: 115-126; Example 4.1
 Lesson Objectives:
 1. How do you find a consumer's optimal choice? Know how to solve graphically and using Lagrange. How and why are they the same?
 2. What is the difference between interior and corner solutions & what type of preferences will lead to each?

- 6 **27-Jan Constrained Consumer Choice - the opposite way!**
 Read: 129-131 (Exp. Min) ; Example: 4.4
 Lesson Objectives:
 1. Solve an expenditure minimization problem.
 2. What is the "dual" relationship between utility maximization and expenditure minimization?

PS 1 Due

7 **27-Jan Marshallian Demand: Total Effects of an Income or Price Change**

Read: 143-151; Example 5.2

Lesson Objectives:

1. As the price of a good varies, how does it affect the demand curve?
2. As income varies, how does it affect the demand curve?
3. What is an elasticity? How can you calculate price and income elasticity of demand?

8 **3-Feb Demand: Hicksian Demand Curve**

Read: 151-152; 154-161; Examples: 5.3, 5.4, 5.5

Lesson Objectives:

1. Break down the change in price into income and substitution effects
2. What are Hicksian and Marshallian Demand Curves? How do they differ? Which one represents the substitution effect?
3. Derive the Slutsky Equation.

LESSON DAY 1**BLOCK 1: CONSUMER THEORY****GRADED
EVENT****9 5-Feb Demand: Consumer Theory Application: CPI, Welfare, and Policy Analysis**

Read: 178-181; Read: 166-170; Example 5.6

Lesson Objectives:

1. Does a CPI adjustment help or hurt an individual's welfare? Use income and substitution to solve.
2. What is Consumer Surplus, Compensating Variation, and Equivalent Variation?
3. How do government policies (such as taxes or food stamps) affect a consumer's well-being in terms of CS, CV, and EV?

PS 2 Due**10 11-Feb Consumer Theory Application: Labor Supply**

Read: 575-582; Example 16.1

Lesson Objectives:

1. How can the consumer optimization problem apply to labor decisions?
2. How do you break down a wage change into income and substitution effects?

11 13-Feb Consumer Theory Application: Risk Preferences

Read: p. 211-216; Example 7.2

1. What does an individual's utility function look like if they are: risk averse, risk neutral, or risk preferring? What is the difference between expected utility and utility of expected value?
2. When should someone buy insurance?

President's Day (No Classes on 17 Feb 20)

12 18-Feb Review Problem Set/Block Review**PS 3 Due****13 20-Feb WPR 1****WPR 1**

- 14 **28-Feb Transition to Producer Theory**
Read: 297-305; Example: 9.1
Lesson Objectives:
1. Why does marginal productivity diminish?
2. How is substitutability between capital and labor depicted on an isoquant?
3. How does the marginal rate of technical substitution relate to the isoquant?
4. What are increasing, decreasing, and constant returns to scale production functions?
- 15 **2-Mar Production Functions; Cost-minimizing Ratio of Labor to Capital**
Read: 310-314; Example: 9.3; Read: 327-333; Example: 10.1
Lesson Objectives:
1. What is the difference between linear, fixed proportion, Cobb-Douglas, and CES production functions?
2. How do you find the cost-minimizing ratio of labor to capital?
3. What does a firm's long run expansion path look like?
- 16 **4-Mar Cost Functions**
Read: 333-339; Example: 10.2; Read: 348-356; Example 10.5
Lesson Objectives:
1. Find the total cost function from an expansion path.
2. How do average and marginal costs relate? Be able to show graphically and mathematically.
- 17 **6-Mar Short-Run versus Long-Run**
Read: 348-356; Example 10.5
Lesson Objectives:
1. What does a firm's short-run expansion path look like?
2. How do marginal cost, average cost, average variable cost, and average fixed cost relate?
3. What is the relationship between long-run and short-run costs?

Spring Break (No Classes 7 Mar 20 - 15 Mar 20)

LESSON DAY 1

BLOCK 2: PRODUCER THEORY

GRADED
EVENT
PS 4 Due

- 18 **16-Mar Profit maximization**
Read: 363-372; Example: 11.1
Lesson Objectives:
1. How do you calculate marginal revenue?
 2. Why does profit maximization occurs where $MR=MC$?
 3. What is the relationship between marginal revenue and elasticity. How does this relate to the price mark-up by a firm?

- 19 **20-Mar Monopoly: Profit Maximization**
Read: 491-501; Examples 14.1 & 14.2
Lesson Objectives:
1. Why is a monopoly's production decision different from a firm in a perfectly competitive market? Where do they produce and what do they charge?
 2. What are the conditions that allow a monopoly to exist?
 3. Why do monopolies always produce on the elastic portion of their demand curve? (handout)
 4. What is CS, PS, and DWL in a monopoly?

- 20 **23-Mar Oligopoly: Cartels and Cournot Profit Maximization**
Read: 525-533; 546-548; Examples 15.1, 15.2, 15.3, 15.8
PS 5 Due
1. What conditions create an oligopolistic market?
 2. What are the assumptions for a Cournot market?
 3. How much will firms produce and charge in a Cournot market?
 4. If, instead, there was a leader and a follower, how would you set up the market? (Stackelburg)
 5. What is CS, PS, and DWL in an oligopoly?

- 21 **25-Mar Short-Run & Long-Run Profit Maximization under Perfect Competition**
Read: 372-376 & 381-382; Example: 11.3 & 11.4; Read: 418-424; Example: 12.4
Lesson Objectives:
1. What is the short-run supply function for a perfectly competitive firm?
 2. How much will firms produce and when will they decide to shut-down?
 3. Where will price be in the long-run for a perfectly competitive market?
 4. What is the long-run supply curve for the market?

- 22 **31-Mar Review Problem Set/Block Review**
PS 6 Due
23 **2-Apr WPR 2**
WPR 2

LESSON	DAY 1	BLOCK 3: MARKET FAILURE & GENERAL EQUILIBRIUM	GRADED EVENT
24	6-Apr	Government Intervention Read: 431-439; Example 12.6, 12.7 1. What are the welfare effects of a tax, tariff, quota, price ceiling, and price floor? (Review (from SS201)) 2. Does the implementation of a tax increase the price of the good by the full amount of the tax? 3. What is the resulting CS, PS, and DWL when there is a tax?	Article title due to Section
25	9-Apr	Tax Incidence and Welfare Same as above, plus Analytical Problem 12.11 (p.443) 1. How does elasticity and the size of the tax affect deadweight loss? 2. What is the optimization problem to solve the Ramsey Rule? 3. Who bears the burden of a tax?	
26	13-Apr	Competitive Market Application: Market Failures (Externalities) Read: 683-685; 689-695; Examples: 19.1 & 19.2 1. What are the effects of an externality on a competitive market? 2. When an externality exists, how is welfare maximized? 3. How do property rights help reduce externalities?	PS 7 Due
27	15-Apr	General Equilibrium: Two-Person Exchange Economy Read: 183-186; 451 (Set up Edworth Box); Lesson Objectives: 1. How do markets interact and why is it important to understand? 2. How can a two-person exchange economy be represented? Use Edgeworth Box.	Paper Due
28	20-Apr	General Equilibrium: The Edgeworth Box Read: 464-473; Example: 13.3 Lesson Objectives: 1. Where will individuals choose to exchange goods in an Edgeworth Box? 2. What does pareto efficiency mean and when will it occur?	
29	23-Apr	Problem Set Review / First and Second Welfare Theorems Read: 470-471 (again) Lesson Objectives: 1. Are competitive markets efficient? 2. What are the First and Second Theorems of Welfare Economics? 3. Are efficient equilibrium always equitable? And visa versa? What does equity mean?	
30	27-Apr	Course Review	PS 8 Due