

Professor Anthony M. Marino
Department of Finance and Business Economics

GSBA 602-Fall 2023

Selected Issues in Economic Theory

Textbook: Mas-Colell, Whinston, Green, *Microeconomic Theory*, Oxford, 1995: ISBN-13: 978-0195073409

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Topics

Individual Decision Making

Chapter (MWG)	Topic
1.	Preference and Choice
2.	Consumer Choice.
3.	Classical Demand Theory.
4.	Aggregate Demand
5.	Production
6.	Choice under Uncertainty

Market Equilibrium and Market Failure.

Chapter	Topic
10.	Competitive Markets

- 11. Externalities and Public Goods
- 12. Market Power

An Introduction to Information Economics

Chapter/Notes	Topic
Lecture Notes 10 and Ch 7-8	Games
Lecture Notes 11 and Ch 13-14	Information

Other Course Information

1. I will give a midterm and a final exam. In addition I will assign problem sets, which will be graded and returned. The point allocation scheme is as follows:

Midterm.....80 points

Final Exam.....120 points (See final examination schedule)

Problem Sets.....80 points

2. Other texts which may be of interest to you include the following (in order of importance):

- Kreps, D., *A Course in Microeconomic Theory*, Princeton University Press, 1990.
- Kreps, D., *Microeconomic Foundations I, Choice and Competitive Markets*, Princeton University Press, 2013.
- Kreps, D., *Microeconomic Foundations II, Imperfect Competition, Information, and Strategic Interaction*, Princeton University Press, 2023.
- Varian, H., *Microeconomic Analysis*, W. W. Norton, Third Edition, 1992.

- Jehle, G. and P. Reny, *Advanced Microeconomic Theory*, Addison Wesley, Third Edition, 2011.
- Nicholson, W., and C. Snyder, *Microeconomic Theory: Basic Principals and Extensions*, Cengage Learning, Twelfth Edition, 2016.
- Rasmusen, E., *Games and Information*, Blackwell, Fourth Edition, 2006.
- Fudenberg, D. and J. Tirole, *Game Theory*, MIT Press, 1991.
- Tirole, J., *The Theory of Industrial Organization*, MIT Press, 1998.

Tentative Schedule

Session	Date	Topics	MWG	Marino
1 M	8/21	Preferences and Choice	Ch1	L0, L1
2 W	8/23	Preferences and Choice	Ch1	L1
3 M	8/28	The Consumer's Choice	Ch2	L2
4 W	8/30	The Consumer's Choice	Ch2	L2
5 W	9/6	Neoclassical Demand Theory	Ch3	L3
6 M	9/11	Neoclassical Demand Theory	Ch3	L3
7 W	9/13	Neoclassical Demand Theory	Ch3	L3
8 M	9/18	The Aggregation of Demand	Ch4	L4
9 W	9/20	The Aggregation of Demand	Ch4	L4
10 M	9/25	Production Theory	Ch5	L5
11 W	9/27	Production Theory	Ch5	L5
12 M	10/2	Decision Making under Uncertainty	Ch6	L6
13 W	10/4	Decision Making under Uncertainty	Ch6	L6
14 M	10/9	Decision Making under Uncertainty	Ch6	L6
15 W	10/11	Midterm *****	*****	*****
16 M	10/16	Competitive Markets	Ch10	L7
17 W	10/18	Competitive Markets	Ch10	L7
18 M	10/23	Competitive Markets	Ch10	L7
19 W	10/25	Externalities and Public Goods	Ch11	L8
20 M	10/30	Externalities and Public Goods	Ch11	L8
21 W	11/1	Imperfect Competition	Ch12	L9
22 M	11/6	Imperfect Competition	Ch12	L9
23 W	11/8	Games	Ch7,8	L10
24 M	11/13	Games	Ch7,8	L10
25 W	11/15	Games and Information	Ch7,8,13	L10, L11
26 M	11/20	Information	Ch,13,14	L11
27 M	11/27	Information	Ch,13,14	L11
28 W	11/29	Review		

Table of Contents: GSBA 602 Lecture Notes

Lecture 1: Preferences and Choice

1. The Two Approaches: Preferences versus Choice Rule
 - a. Preferences
 - b. Utility
 - c. Choice Rules
 - d. WARP
2. Relationships between the Two Approaches

Lecture 2: Choice Rules

1. The Budget Constraint
2. Demand Functions
 - a. Miscellaneous Definitions
 - HD(0)
 - WL
 - Income Δ 's
 - Price Δ 's
 - Elasticities
 - b. Euler's Theorem, Walrasian Demands and Elasticities
 - c. Cournot Aggregation
 - d. Engle Aggregation
3. Warp and the compensated law of demand (\Leftrightarrow)
4. WL, HD(0), and WARP \Rightarrow S negative semidefinite but not symmetric.

Lecture 3: Neoclassical Demand Theory

1. Additional assumptions on a rational preference relation and their implications on u.

2. When can the preference relation be represented by u ? What is cardinal versus ordinal?

3. u -Max

4. $x(p,w)$ and Hicksian Composite Commodity Theorem

5. $v(p,w)$

6. $e(p,u)$

7. $h(p,u)$, CLD

8. Relationships

a. $h_i = \partial e / \partial p_i$ (h and e)

b. The Slutsky equation (x and h)

c. Roy's Identity (v and x)

9. Welfare

a. EV

b. CV

c. AV

10. SARP

Lecture 4: Aggregation

1. Can aggregate demand be expressed as a function of w independent of the distribution of w_i ?

2. When does aggregate demand satisfy WARP?

3. The positive representative consumer and the normative representative consumer.

Lecture 5: Production Theory

1. The Production Set and Transformation Frontier

2. Common Properties of Technology Sets

3. Profit Maximization and Cost Minimization

a. The profit function and its properties

- b. The cost function and its properties for the single output case
- c. Conditional factor demands from the cost minimization problem
- d. Cost and supply in the single output case with price taking behavior.
- 4. Aggregation of Production Decisions
 - a. Basic results on firm and economy wide profit maximization
 - b. Efficiency and the first and second fundamental theorems of welfare economics

Lecture 6: Decision Making under Uncertainty

- 1. Expected Utility Theory
 - a. A lottery
 - b. A compound lottery
 - c. The reduced form lottery
 - d. The continuity and independence axioms for lotteries
 - e. The expected utility form for the utility function
 - d. Linear transformations and the expected utility representation
 - f. The expected utility theorem
- 2. Risk Aversion
 - a. Bernoulli utility function and the continuous case
 - b. Definitions of risk aversion, risk seeking and risk neutral behavior
 - c. The certainty equivalent to a gamble and the probability premium
 - d. Optimal amount of insurance
 - e. The coefficient of absolute risk aversion
 - f. The coefficient of relative aversion
 - g. First and second order stochastic dominance

Lecture 7: Competitive Markets

- 1. Pareto Optimality and the General Competitive Equilibrium

- a. Definitions
- b. The first and second fundamental theorems of welfare economics
- 2. The Single Competitive Firm in the Short-Run
 - a. Firm's supply
 - b. Market supply and equilibrium
 - c. Welfare implications of the single market equilibrium
 - d. Governmental interference with competitive markets and surplus arguments
- 3. Long-run Equilibrium of the Competitive Firm
 - a. The equilibrium
 - b. Adjustments to equilibrium

Lecture 8: Externalities and Public Goods

- 1. Externalities
 - a. The Definition of an Externality
 - b. The failure of the competitive market in this case
 - c. The remedies for solving the externality problem
 - (i) Quotas
 - (ii) Pigouvian taxes
 - (iii) Coase bargaining
 - (iv) A competitive market for the right to generate the externality
- 2. Public Goods
 - a. Definition of a public good
 - b. The non-optimality of private provision
 - c. The remedies for solving the problem of public good provision
 - (i) Taxes and subsidies
 - (ii) Lindahl equilibrium

Lecture 9: Imperfect Competition

1. Pure Monopoly
 - a. Basic equilibrium
 - b. Lerner index
 - c. Dead-weight loss
 - d. The perfectly discriminating monopolist and welfare implications
2. The Bertrand Model
 - a. Set-up and the basic equilibrium for the homogeneous case
 - b. Results for the heterogeneous case
3. Nash-Cournot Model
 - a. The homogeneous case and the basic results
 - b. The heterogeneous case
4. The Stackleberg Model and the Advantage of Being a First Mover
 - a. The basic model and the equilibrium
 - b. The comparison to the Nash-Cournot Equilibrium and the Equilibrium of Perfect Collusion
5. Perfect Collusion

Lecture 10: Game Theory

1. General Definitions
 - a. Cooperative versus non-cooperative games
 - b. Constant versus variable sum games
 - c. An action versus a strategy
 - d. Payoffs
 - e. Equilibrium concept
2. Dominant Strategies and Dominant Strategy Equilibrium

3. Nash Strategies and Nash Equilibrium
 - a. Mixed strategies versus pure strategies
 - b. Mixed strategy equilibrium
4. Dynamic Games with Symmetric Information
 - a. Normal form
 - b. Extensive form
 - c. Basic information definitions: information set, perfect information, certain information, symmetric information, and complete information.
 - d. Subgame perfection
 - e. Examples of two move games
 - f. Infinite repetition and the Folk Theorem
5. Dynamic Games with Asymmetric Information
 - a. The perfect Bayesian Equilibrium
 - b. Equilibrium beliefs and out of equilibrium beliefs
 - c. The Intuitive Criterion (Cho-Kreps)
 - d. Examples of games

Lecture 11: Information

1. General
 - a. The necessary ingredients for an agency problem: asymmetric information and divergence of incentives
 - b. Hidden action (moral hazard) and hidden information (adverse selection)
2. Hidden Action
 - a. A general problem
 - b. A simple discrete version and the technique of point-wise optimization
 - c. A continuous version and the first-order approach

- d. The first-best benchmark
- e. The optimal linear contract
- 3. Hidden Information
 - a. The signaling models and the lemons problem
 - b. The definition of a signal
 - c. A labor market signaling model
 - d. The self-selection approach and an example where the principal does not know worker type
 - e. The revelation principal and mechanism design
 - f. The mechanism design approach and an example of firm regulation.
 - g. The ex-post audit approach to hidden information and a safety regulation example.

Statement on Academic Conduct and Support Systems

Academic Integrity:

The University of Southern California is a learning community committed to developing successful scholars and researchers dedicated to the pursuit of knowledge and the dissemination of ideas. Academic misconduct, which includes any act of dishonesty in the production or submission of academic work, compromises the integrity of the person who commits the act and can impugn the perceived integrity of the entire university community. It stands in opposition to the university's mission to research, educate, and contribute productively to our community and the world.

All students are expected to submit assignments that represent their own original work, and that have been prepared specifically for the course or section for which they have been submitted. You may not submit work written by others or "recycle" work prepared for other courses without obtaining written permission from the instructor(s).

Other violations of academic integrity include, but are not limited to, cheating, plagiarism, fabrication (e.g., falsifying data), collusion, knowingly assisting others in acts of academic dishonesty, and any act that gains or is intended to gain an unfair academic advantage.

The impact of academic dishonesty is far-reaching and is considered a serious offense against the university. All incidences of academic misconduct will be reported to the Office of Academic Integrity and could result in outcomes such as failure on the assignment, failure in the course, suspension, or even expulsion from the university.

For more information about academic integrity see [the student handbook](#) or the [Office of Academic Integrity's website](#), and university policies on [Research and Scholarship Misconduct](#).

Please ask your instructor if you are unsure what constitutes unauthorized assistance on an exam or assignment, or what information requires citation and/or attribution.

Students and Disability Accommodations:

USC welcomes students with disabilities into all of the University's educational programs. [The Office of Student Accessibility Services](#) (OSAS) is responsible for the determination of appropriate accommodations for students who encounter disability-related barriers. Once a student has completed the OSAS process (registration, initial appointment, and submitted documentation) and accommodations are determined to be reasonable and appropriate, a Letter of Accommodation (LOA) will be available to generate for each course. The LOA must be given

to each course instructor by the student and followed up with a discussion. This should be done as early in the semester as possible as accommodations are not retroactive. More information can be found at osas.usc.edu. You may contact OSAS at (213) 740-0776 or via email at osasfrontdesk@usc.edu.

Support Systems:

[Counseling and Mental Health](#) - (213) 740-9355 – 24/7 on call

Free and confidential mental health treatment for students, including short-term psychotherapy, group counseling, stress fitness workshops, and crisis intervention.

[988 Suicide and Crisis Lifeline](#) - 988 for both calls and text messages – 24/7 on call

The 988 Suicide and Crisis Lifeline (formerly known as the National Suicide Prevention Lifeline) provides free and confidential emotional support to people in suicidal crisis or emotional distress 24 hours a day, 7 days a week, across the United States. The Lifeline is comprised of a national network of over 200 local crisis centers, combining custom local care and resources with national standards and best practices. The new, shorter phone number makes it easier for people to remember and access mental health crisis services (though the previous 1 (800) 273-8255 number will continue to function indefinitely) and represents a continued commitment to those in crisis.

[Relationship and Sexual Violence Prevention Services \(RSVP\)](#) - (213) 740-9355(WELL) – 24/7 on call

Free and confidential therapy services, workshops, and training for situations related to gender- and power-based harm (including sexual assault, intimate partner violence, and stalking).

[Office for Equity, Equal Opportunity, and Title IX \(EEO-TIX\)](#) - (213) 740-5086

Information about how to get help or help someone affected by harassment or discrimination, rights of protected classes, reporting options, and additional resources for students, faculty, staff, visitors, and applicants.

[Reporting Incidents of Bias or Harassment](#) - (213) 740-5086 or (213) 821-8298

Avenue to report incidents of bias, hate crimes, and microaggressions to the Office for Equity, Equal Opportunity, and Title for appropriate investigation, supportive measures, and response.

[The Office of Student Accessibility Services \(OSAS\)](#) - (213) 740-0776

OSAS ensures equal access for students with disabilities through providing academic accommodations and auxiliary aids in accordance with federal laws and university policy.

[USC Campus Support and Intervention](#) - (213) 740-0411

Assists students and families in resolving complex personal, financial, and academic issues adversely affecting their success as a student.

[Diversity, Equity and Inclusion](#) - (213) 740-2101

Information on events, programs and training, the Provost's Diversity and Inclusion Council, Diversity Liaisons for each academic school, chronology, participation, and various resources for students.

[USC Emergency](#) - UPC: (213) 740-4321, HSC: (323) 442-1000 – 24/7 on call

Emergency assistance and avenue to report a crime. Latest updates regarding safety, including ways in which instruction will be continued if an officially declared emergency makes travel to campus infeasible.

[USC Department of Public Safety](#) - UPC: (213) 740-6000, HSC: (323) 442-1200 – 24/7 on call

Non-emergency assistance or information.

[Office of the Ombuds](#) - (213) 821-9556 (UPC) / (323-442-0382 (HSC)

A safe and confidential place to share your USC-related issues with a University Ombuds who will work with you to explore options or paths to manage your concern.

[Occupational Therapy Faculty Practice](mailto:otfp@med.usc.edu) - (323) 442-2850 or otfp@med.usc.edu

Confidential Lifestyle Redesign services for USC students to support health promoting habits and routines that enhance quality of life and academic performance.

Other Policies

Please turn off your cellular phones before entering the classroom. They may not be used during classes. Since your phone should be turned off, texting during class is not only disrespectful, but it is also a serious violation of class policy.

Students are strongly encouraged to ask questions during class and during office hours. Most times it is not feasible to give a comprehensive answer to questions sent to me by e-mail. If you send me a question by e-mail and I believe that it is not feasible to give a satisfactory answer to that question by e-mail, I will ask you to come to my office hours.

If you believe that AI will help you to understand the concepts presented in this course, feel free to use it.