

DePaul University
Kellstadt Graduate School of Business

ECO 515: Microeconomics of Market Organization
Winter 2022

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Important: As the term progresses, we may need to adjust some parts of the syllabus (e.g., due dates or instructions for assignments) to keep the course running smoothly and in a way that is manageable for all. The current circumstances have sent us into somewhat uncharted territory, but we will work to have an excellent experience together.

General Objective

Study the economics of imperfect competition and how it applies to real world scenarios.

Course Description

This class introduces major topics in the economics of imperfectly competitive industries (AKA Industrial Organization, or IO for short). The main goals are to (a) understand basic models of firm behavior under various industry configurations, (b) analyze how the interaction of firms determines market outcomes, and (c) discuss a variety of examples and empirical studies that illustrate the applications of the theory. While we will discuss public policies, such as antitrust and other business regulations, this is not a systematic or self-contained policy class, but we will broadly study how the underlying theory applies in the regulatory environment. Our framework and methodology will draw on microeconomic theory, game theory, as well as empirical evidence and case studies.

Prerequisites

We will assume understanding of microeconomic theory at the level of ECO 505. We will also make extensive use of game theory in the second part of the course, but I will cover the basics of this material as part of the class.

Course Format

We will conduct this online course in an *Online Hybrid* format. This means that:

1. I will deliver my lectures asynchronously and post them on D2L.
2. Every week we will have Zoom contact hours on Mondays from 5:45 to 7:15 p.m. in which we will review lecture material, have group discussions, and look at new applications of the material covered in the lectures.

I will post my lectures on Mondays before 11:59 p.m. You can work through each week's lecture at your own pace but keep in mind that we will reference lecture materials during the contact hours and that there will be weekly deadlines for discussion posts and assignments.

Please make sure to have the necessary technical resources to be able to access course materials and complete assignments. If you do not have access to the following resources, please let me know immediately so I can make accommodations for you:

- A computer that connects to the internet (web cam helpful but not required)
- A working email account that you check regularly (updated in Campusconnect). All class-related communication comes through DePaul email, so make sure to check this frequently
- Access to Microsoft Office or similar software
- Ability to playback video files

Office Hours

I will conduct office hours in two ways:

1. By appointment at a mutually convenient date and time. Please email me to make an appointment. I am responsive to email and will reply the same day.
2. During our Monday Zoom contact hours, we will open with a Q&A session.

Contact hours are also good to chat about current events related to the class and get to know each other in a synchronous way.

Camera Use

This a graduate class that will greatly benefit from interaction and exchange of insights. It will be much easier for us to feel connected as a class and build a sense of community if we can see and hear each other during our Zoom sessions. While I don't require students to always have their cameras on, I strongly encourage having your camera on during class meetings. There will be times during our sessions (e.g., when I am sharing my screen), where you will not need to have your camera on, but

please try to keep them on during our discussions (including breakout rooms). If you have any other valid reasons to not be on camera (e.g., bandwidth limitations or equipment problems), please let me know. Also, please add an image to your Zoom profile if you must have your camera off. That way we will have a visual representation of you instead of just a tile with your name (it's hard to talk to a tile!).

Course Materials

The course is based on standalone notes and academic papers. Although **not required**, two excellent textbooks are:

Luis Cabral, Introduction to Industrial Organization 2e, MIT Press, 2017. A recent update to a best-selling text.

<https://www.amazon.com/Introduction-Industrial-Organization-MIT-Press/dp/0262035944/>

Jeffrey Church and Roger Ware, Industrial Organization: A Strategic Approach, McGraw-Hill, 2000. A very good textbook being currently updated. The first edition is available for free in pdf form at:

http://works.bepress.com/cgi/viewcontent.cgi?article=1022&context=jeffrey_church

Other textbooks worth considering are:

Dennis Carlton and Jeffrey Perloff, Modern Industrial Organization (any edition), Harper and Collins. Very popular choice in IO classes.

<https://www.amazon.com/Modern-Industrial-Organization-Dennis-Carlton/dp/0321180232/>

Jean Tirole, The Theory of Industrial Organization, MIT Press, 1988. A classic text, still considered by many as the "bible" of modern IO.

<https://www.amazon.com/Theory-Industrial-Organization-MIT-Press/dp/0262200716/>

I will also post a variety of other readings and links on D2L.

Grading

I will determine your grade using the following components and weights:

Case reports (individual grade)	30%
Exercises (group grade)	15%
Participation/Presentation (individual grade)	25%
Final Project (group grade)	30%

The grading scale is:

A	93% and above	C	73-76%
A-	90-92%	C-	70-72%
B+	87-89%	D+	67-69%
B	83-86%	D	60-66%
B-	80-82%	F	59% and below
C+	77-79%		

We will grade and return your assignments within one week or less of their due dates. If you require any clarification on any of your grades, please contact me at most ten days after receiving your graded assignment.

Case Reports

You will write a report on a case in preparation for a discussion every week starting on week 3. This report will not exceed three double (or single and a half) spaced pages and consists of (a) a summary of the most relevant economic aspects of the reading, (b) relationship to class material, (c) what you consider to be the main economic and policy takeaways, and (d) noteworthy strengths and weaknesses (feel free to be critical). Your report, in PDF form should be around 2 to 3 pages, and is due on D2L at 5 p.m. before class each week (based on the table below). The grading scale is from 0 (very poor) to 10 (outstanding). If you are tasked with leading a discussion (see below), you will be exempt from this report and score an automatic 10 points.

Some basic tips on writing case reports:

Content

- Applies concepts and frameworks from class to the case without reteaching class material
- Does not quote or cut/paste extensively from the case
- Takeaways and strengths and weakness assessment are thoughtful (backed up by theory or evidence, and not unsubstantiated claims)
- Uses economic concepts and terminology correctly

Organization and Writing

- Report is logically organized and easy to follow
- Report uses primarily active voice
- Report does not use flowery or convoluted language
- Report uses accurate spelling, punctuation, and grammar
- Report properly cites and attributes sources outside of the case itself

Exercises

Starting on week 3, I will assign bi-weekly exercise sets based on the class material. These exercises may be either conceptual or analytical (i.e., you may need to use graphs and math). I will grade the analytical questions mainly on the quality of your

formulation and interpretation of the. Exercises will be due on D2L at noon Mondays before class (see timetable below). You will work in groups of two, and the format is either MS Word or PDF using single and a half or double-spacing. The grading scale ranges from 0 (very poor) to 10 (outstanding).

Class Participation and Presentation

Preparation and participation are vital in this class. There are two participation components in this class: Synchronous Sessions Discussions, and D2L Discussion Boards.

Synchronous Discussions

We will spend a significant fraction of our Monday synchronous sessions discussing cases and class material, and I expect you to actively participate in these discussions. Frequent absences will likely result in a reduced participation grade, so try to make it a point to be there for our Monday sessions. What follows is a standard spiel that you may have seen elsewhere: *“Learning opportunities are maximized when all students are actively engaged in class discussion. Active engagement means not only that you have prepared the material, but also that you are paying attention to the comments of other students and seeking opportunities to make comments that move the class discussion forward. Discussions take a non-trivial fraction of class time, so there will be ample opportunity for everyone to participate, especially in a relatively small group like this. To increase opportunities for effective participation, I may occasionally cold call students during a discussion. Rest assured that if you have invested quality time to prepare, you will have something valuable to say during the discussion.”*

To serve as the basis for case discussions, I will assign a group of two students to present an outline and be discussion leaders. The structure of the discussion will be (1) a brief introduction and motivation, (2) summary of the main results and findings, (3) conclusions and takeaways, (4) Q&A. I expect each discussion to last somewhere in the vicinity of 45 minutes. If you are scheduled to lead a discussion, please prepare slides and e-mail them to me for comments at least 24 hours before the session.

D2L Discussion Boards

There will be weekly online discussions in the D2L discussion boards. I will post two main types of questions for discussion each week: (i) Reading questions or (ii) Questions based on the lectures and video content. **At a minimum, you are required to make two posts each week; one must be a thread that you start, and one must be a response to a thread someone else started.** You may exceed this minimum requirement as you wish. **Discussion boards will close on Mondays at noon.**

Discussion Post Standards and Etiquette

- a. Posts demonstrate knowledge of the class concepts and are linked to evidence and/or course material.
- b. Timely -adhere to the time window set aside for each discussion, not posted at the last minute. Timely posting leads to productive discussions, in that it allows class members to respond to each other's comments. Posts will be marked down if they are consistently entered during the last hours the board is open.
- c. If your post is related to an existing thread, you must reply to the existing thread, not create a new thread.
- d. Respectful -even when there is strong disagreement.
- e. Stimulate thinking. Do not be afraid to challenge existing comments.
- f. Encourage others to provide evidence and/or refer to course concepts to support their arguments.
- g. Move the class understanding forward.
- h. Do not ramble.

Posts that simply state "I agree" or "I was going to say the same thing" or repackage what a previous classmate said are not actually discussion posts and will not be credited as such.

Please do not write in all CAPS. If you want to emphasize a word or phrase you may write it in bold, italics, underline it, or put an asterisk before and after the word or phrase.

I will actively monitor the discussion boards and participate when I see fit. I will keep track of the posting requirements and the quality of your comments.

Final Project

You will work in groups of two on a 10-15 page project, where you will identify and study some of the issues discussed in class in the context of a particular industry or market of your choice. The title of your project is "The Organization of the YYY Industry," where you choose YYY. Possible examples are Food Trucks in Chicago, Cryptocurrencies, Sports Leagues, Political Parties, Ride Sharing, Food Delivery, Freight Transportation, Generic Pharmaceuticals, etc. Some of the issues of interest include product offerings, pricing, vertical structure, entry barriers, antitrust concerns, innovation, and disruption, etc. Please see me or email me about potential topics within the first three or four weeks of class. You are required to upload two progress reports into D2L (one on week 5 and one on week 8). I will specify what these progress reports must contain later. The paper, in PDF form, is due on D2L on week 11 (see timetable below).

Your progress reports must include:

- Progress Report 1 (due 2/4): A brief description of your topic, including what industry you are choosing, why is it interesting from the economic standpoint, and what issues from class -so far- you intend to highlight. Limit is two pages.

- Progress Report 2 (due 2/25):
 - (a) A better-defined market or industry for your analysis. If you started too broad or too narrow, this is your chance to refine your relevant market.
 - (b) Two or three well identified market structure or competitive issues you will analyze based on what we have learned in class. Why are they especially relevant to your industry or market?
 - (c) Some preliminary data on the market or industry you are studying. These can be market shares, sales, volumes, prices, concentration indices, or any other initial data you have been able to gather in your early research stage.
 - (d) A short bibliography or set of readings/sources you have consulted (or will consult).

Limit is 3 to 4 pages.

Some basic tips for writing the paper:

- Consult multiple and balanced sources. Try not to fall into the trap of getting all or most of your information from one source, especially if the issue is contentious (as it is often the case if you touch on competition policy issues). Research posted on the web is very dangerous this way. Don't write public relations fluff!
- You must provide all references and they must be complete (date, issue, publisher etc.). All data and information reported must be attributed to its source.
- Include original thought –this is not just a book or article report. Your ideas must be supported with data and/or references to economic theory.

Group formation

You will work in groups of two on both the exercises and final project. There is a class roster available on D2L under Classlist. If you know someone in the class or would like to work with someone in the class, please reach out to that person using the D2L Class List feature. I will set up a group sign-up on D2L. The first group exercise set is due week 3 (January 17).

Course Organization:

The learning unit in this course is the week. Each quarter has 10 instructional weeks. To avoid bottlenecks of due dates with respect to your other classes, we will follow a weekly schedule that begins on Monday (i.e., new lecture videos and discussion questions will be posted at the latest on Mondays).

Week	Start Date	/cases, projects
1	January 3	America's Monopoly Problem (No Report)
2	January 10	Case 1 (No Report); Introductions Thread due
3	January 17	Case 2 due at 5 p.m.; Exercise Set 1 due at noon
4	January 24	Case 3 due at 5 p.m.
5	January 31	Case 4 due at 5 p.m.; Exercise Set 2 due at noon
	February 4	Progress Report 1 due at 11:59 p.m.
6	February 7	Case 5 due at 5 p.m.
7	February 14	Case 6 due at 5 p.m.; Exercise Set 3 due at noon
8	February 21	Case 7 due at 5 p.m.
	February 25	Progress Report 2 due at 11:59 p.m.
9	February 28	Case 8 due at 5 p.m.; Exercise Set 4 due at noon
10	March 7	Case 9 due at 5 p.m. (Optional)
11	March 14	Paper due at 11:59 p.m.

Academic Integrity

All work completed for this course must adhere to the University Academic Integrity Policy which you can review at <http://academicintegrity.depaul.edu>.

I may use plagiarism detection technology for all written work submitted for this class to ensure the work is the student's own creation and is not in violation of DePaul University's Academic Integrity Policy. Submission of work for this course constitutes (i) a pledge that the work is the student's own original work and (ii) consent to have the work submitted to verify that fact.

You are welcome to use outside sources for exams, discussion posts, and case reports. If you use any materials beyond the text and lecture videos, you must cite them properly. Proper citation includes using quotation marks if you paraphrase.

Course Outline

****The only required readings are the assigned cases. The rest are for your reference only and are not required****

Week 1 (January 3)

Topic: *Introduction, Market Power, and Market Definition*
 -The Microeconomics of Market Power
 -Competition vs. Monopoly
 -Surplus analysis and deadweight loss
 -Measures of market power
 -Antitrust Policy

Readings: Church and Ware (CW)-Ch. 1-2, Cabral (C)-Ch. 1, 5.3-5.6

“America’s Monopoly Problem, Explained by your Internet Bill,” Stewart, *Vox*, 2020.

“Market Definition: Use and Abuse,” Carlton, *Competition Policy International*, 2007.

“Are Relevant Markets Ever Irrelevant?,” Levy, *HMG Review Project*, 2009.

“Market Definition with Differentiated Products: The Post-Nabisco Cereal Merger,” Rubinfeld, *Antitrust Law Journal*, 2000-2001.
Epic Games vs. Apple (Verge, Wiki, Casetext)

**1/3 America’s Monopoly Problem Synchronous Discussion (No Report)

Weeks 2 and 3 (January 10 and 17)

Topic: *Monopoly Power and Monopolistic Industries I*

- Monopoly theory
- Barriers to entry
- Price predation
- Bundling and Tying
- Price discrimination and two-part tariffs
- Durable goods and the Coase conjecture

Readings: CW-Ch. 4, 5, 14, and 21, C-Ch. 10 and 12

“What is a Barrier to Entry?,” McAfee et.al., Mimeo, University of Texas, 2006.

“Tying, Bundling, and Loyalty/Requirement Rebates,” Economides, in *Research Handbook of the Economics of Antitrust Law*, 2012.

“The Microsoft Antitrust Case,” Economides, Mimeo, Stern School of Business, 2003.

“Predatory Pricing in the Airline Industry: Spirit and Northwest,” Elzinga and Mills, Mimeo, 2009.

“Price Discrimination,” McAfee, in *Issues in Competition Law and Policy*, ABA Section of Antitrust Law, 2008.

“Damaged Goods,” McAfee and Deneckere, *Journal of Economics and Management Strategy*, 1996.

“Durability and Monopoly,” Coase, *Journal of Law and Economics*, 1972.

“Links Between Vertically Related Markets, Kodak,” Mackie-Mason and Metzler, Mimeo, 2002.

**1/10 Introductions Thread due

**1/10 Epic Games vs. Apple Synchronous Discussion (No Report)

**1/17 Microsoft Synchronous Discussion (Report due at 5 p.m.)

Weeks 4 and 5 (January 24 and 31)

Topic: *Static Game Theory and Oligopoly*

- One-shot games and Nash equilibrium
- Static oligopoly with homogeneous goods: Cournot and Bertrand
- Static oligopoly with product differentiation: Bertrand
- Horizontal mergers and collusion incentives

Readings: CW-Ch. 7-8, C-Ch. 7.1-7.2, 8
 "An Introduction to Applicable Game Theory," Gibbons, *Journal of Economic Perspectives*, 1997.
 "Cournot Competition," Andrew Daughety, *The New Palgrave Dictionary of Economics*, 2nd Edition, 2007.
 "A Daubert Discipline for Merger Simulation," Werden et.al., *Antitrust Magazine*, 2004.
 "Antitrust Policy and the Oligopoly Problem," Brock, *The Antitrust Bulletin*, 2006.
 "Antitrust and Higher Education: MIT Financial Aid (1993)," Bamberger and Carlton, 1998.
 "The Long-Distance Industry: One Merger Too Many? MCI WorldCom and Sprint (2000), Pelcovits, 2003.

**1/24 Kodak Synchronous Discussion (Report due at 5 p.m.)

**1/31 MIT Financial Aid Synchronous Discussion (Report due at 5 p.m.)

Weeks 6 and 7 (February 7 and 14)

Topic: *Dynamic Game Theory and Oligopoly*
 -Sequential and repeated games
 -Subgame perfect equilibrium and Stackelberg model
 -Repeated games and tacit collusion
 -Differentiated products Bertrand supergames
 -Cartels and facilitating practices

Readings: CW-Ch. 9-10, C-Ch. 7.3-7.4, 9
 "A Theory of Oligopoly," Stigler, *The Journal of Political Economy*, 1964.
 "Tacit Collusion," Ray Rees, *Oxford Review of Economic Policy*, 1993.
 "Detecting Cartels," Harrington, Mimeo, Johns Hopkins University, 2005.
 "When Are Cartels Stable Contracts?" Dick, *Journal of Law and Economics*, 1996.
 "A Study of Cartel Stability: The Joint Executive Committee," Porter, *Bell Journal of Economics*, 1983.
 "Global Cartels Redux: The Amino Acid Lysine Cartel," Connor, Mimeo, 2007.
 "Bidder Collusion in Forest Timber Sales," Baldwin et.al., *Journal of Political Economy*, 1997

**2/7 MCI Worldcom-Sprint Synchronous Discussion (Report due at 5 p.m.)

**2/14 Joint Executive Committee Synchronous Discussion (Report due at 5 p.m.)

Week 8 (February 21)

Topic: *Vertical Chain*

- Vertical integration and vertical externalities
- Vertical restraints, rival foreclosure and exclusion
- Double marginalization and downstream moral hazard
- Resale price maintenance

Readings: CW-Ch. 22, C-Ch. 12-13

"The Economics of Vertical Restraints," Scherer, *Antitrust Law Journal*, 1983.

"Vertical Restraints and Antitrust Policy," Posner, *The University of Chicago Law Review*, 2005.

"Competitive Effects of Vertical Integration," Riordan, in *Handbook of Antitrust Economics*, 2008.

"Retailer-Instigated Restraints on Suppliers' Sales: Toys 'R' Us," Scherer, 2013.

"The E-Books Case against Apple," Baker, Mimeo, 2017.

"Economic Theories of Harm in Comcast-Time Warner Merger," Rogerson, Mimeo, 2017.

"Tesla and Franchise Laws," Crane, *Iowa Law Review*, 2016.

**2/21 Lysine Synchronous Discussion (Report due at 5 p.m.)

Week 9 (February 28)

Topic: *Networks and Platforms*

- Network externalities
- The economics of two-sided and multi-sided platforms
- Hubs and essential facilities
- Strategic network foreclosure

Readings: C-Ch. 16

"Platform Competition: A Research Framework and Synthesis of Game-Theoretic Studies," Salazar, Mimeo, Manchester Metropolitan University, 2015.

"Platform Envelopment," Eisenman et.al., *Strategic Management Journal*, 2010.

"The Network Effects Bible," Currier, <https://www.nfx.com/post/network-effects-bible>, 2019.

"The Antitrust Analysis of Multi-Sided Platform Businesses," Evans and Schmalensee, *NBER Working Paper 18783*, 2013.

"The Web's New Monopolists," Fox, *The Atlantic*, 2013.

"Amazon's Antitrust Paradox," Khan, *The Yale Law Journal*, 2017.
"Platforms and the Rule of Reason: The American Express Case,"
Hovenkamp, Mimeo, University of Pennsylvania, 2019.
"The Separation of Platforms and Commerce," Khan, *Columbia Law Review*, 2019.

**2/28 Toys R Us and Apple Synchronous Discussion (Report due at 5 p.m.)

Week 10 (March 7)

Topic: TBA

**3/7 American Express Synchronous Discussion (Optional Report due at 5 p.m.)

Week 11 (March 14)

**3/14 Final Project due at 11:59 p.m.