

# Introduction: ECN 453

## Industrial Organization/Competition Policy

Nicholas Vreugdenhil

## Plan for today

1. What is industrial organization?
2. Discuss syllabus

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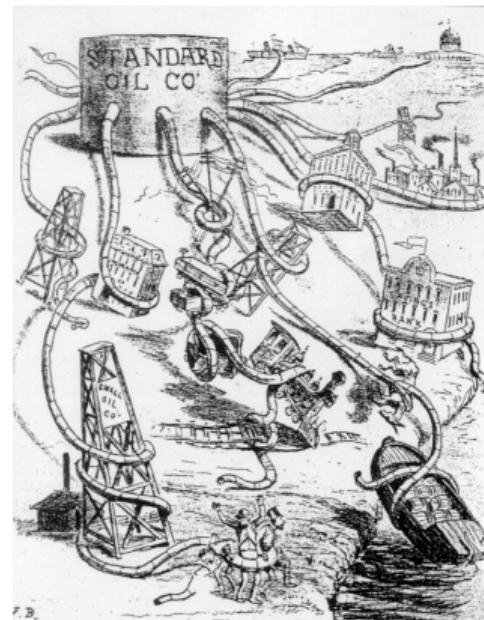
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## Your economics education so far

- So far in your economics courses you have studied (at least) two forms of competition:  
**perfect competition** and **monopoly**.
- We can think of these two forms of competition as polar opposites.
- **Perfect competition** (supply and demand)
  - Many tiny 'atomistic' firms
  - Total surplus is maximized and so the market is 'efficient'. Taxes and other regulation can cause inefficiencies ('deadweight loss')
- **Monopoly**
  - One single firm
  - Monopoly sets price 'too high'; the market is inefficient. Clear scope for regulation

Most real-world markets and firm behaviors do not fit neatly into these two categories.

- Some examples in this course:
    1. Firms set different prices for the same good (e.g. airline tickets, student discounts, pharmaceutical pricing in different countries)
    2. There are only a few big firms in the market (e.g. health insurance, internet plans, ...)
    3. Firms collude to raise prices or restrict supply (e.g. OPEC)
    4. Firms merge with, or acquire, other firms (subject to **antitrust** laws)



*Culver Pictures*

# What is industrial organization (IO)?

- **IO is the study of firm and consumer behavior in markets between (and including) the polar opposites of perfect competition and monopoly.**
- Why is this useful?
  1. Designing regulation:
    - Hinges on the details of how firms and consumer behave.
  2. Firm strategy
    - e.g. How to set prices? How to design online marketplaces?

# IO is central to many heated policy debates right now

POLITICO

AD

LEGAL

## Trump administration launches antitrust salvo against Google

The Trump administration's suit is the most concrete manifestation yet of Washington's growing bipartisan anger at the tech giants' heft and wealth.



Google's headquarters in Mountain View, Calif. | Marcio Jose Sanchez/AP Photo

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AP

## Bills that could force Big Tech breakups unveiled in House

By MARCY GORDON June 11, 2021



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TECH | KEYWORD: CHRISTOPHER MIMS

## What a Tech Breakup Could Mean for You

A push to split up Facebook, Apple, Amazon and Google may mean more competition and innovation. But it may also curb conveniences we've come to take for granted.

Two silhouettes of people are using a hand saw to cut through a large green Apple logo. The logo is composed of the Google and Amazon logos. The Google logo is in the upper left, and the Amazon smile logo is at the bottom right. The background is green.

PHOTO: ROB DODD

UPCOMING EVENTS

Oct 12 10:30 AM - 3:00 PM EDT WSJ Risk & Compliance Forum 2021

Oct 18 9:00 AM - 5:00 PM EDT WSJ Tech Live 2021

[ADD TO CALENDAR](#)

MOST POPULAR NEWS

1. "We Will ROC You": How Russians Crushed the Tokyo Olympics Under an Alias
2. WHO Calls for Halt to Covid-19 Booster

In this course we will focus on the following topics

1. **Weeks 1-5:** Pricing, price discrimination, and an introduction to game theory
2. **Weeks 6-10:** Models of static competition
3. **Weeks 11-End:** Models of dynamic competition and collusion; horizontal and vertical relationships; mergers

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## Syllabus

- E-mail: nvreugde@asu.edu (Use 'ECN 453: [email reason]' in the subject.)
- Website: Canvas
- Zoom Office Hours: Tuesday 4-5pm (663 939 6226) - email me for alternative times.
- Office: CRTVC 455G
- Class Hours: Monday/Wednesday 4:30-5:45pm

# Syllabus

- The required textbook is '*Introduction to Industrial Organization, Second Edition*' by Luis Cabral.
- Grading:
  - **20%** Best 2 out of 3 homework assignments.
    - You should work in groups of 2 or 3 and hand in one homework per group
    - Note that I will accept individual homework (i.e. a group of 1), but I don't recommended this because in the past students who worked in groups tended to do a lot better.
  - **22.5%** Mid-term exam 1
  - **22.5%** Mid-term exam 2
  - **35%** Final exam

# Syllabus

- Your final grade will be converted into a letter grade using the following intervals:

A+	Above 99
A	[94,99)
A-	[90,94)
B+	[87,90)
B	[84,87)
B-	[80, 84)
C+	[75,80)
C	[60,75)
D	[50,60)
E	Below 50

- All of the exams and homework assignments will be in points. To determine your final grade I will first scale the maximum point grade of each exam and homework assignment to 100.<sup>1</sup> I will then take the above weighted average over all of your assessments.

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<sup>1</sup>So, for example, if you get 40/50 on a mid-term exam I will first scale your score to 80/100.

# Syllabus

- This can be a challenging class:
- Make sure you ask for help early!

	GPA	DEW	N	A	B	C	Y	D	E	W
5-year ave	2.4	0.38	409	0.21	0.19	0.23	0	0.06	0.12	0.19

# Syllabus

- There will be three exams: two mid-terms and one final exam. The dates are as follows:
  - Mid-term exam 1 (in class, **September 20**)
  - Mid-term exam 2 (in class, **October 25**)
  - Final exam (in finals week, **December 4**)
- Please make sure that you are able to attend the exams - if you know you have a conflict then I encourage you to take the course in a different semester.
- **Important:** There will be no make up exams without a university sanctioned excuse: if you find out you cannot take an exam you must 1. let me know at least 48 hours before the exam 2. provide documentation for your university sanctioned excuse. If you do not do both 1. and 2. then you will receive 0 points in your exam.
- For **regrades** please attach a note to the front of the assessment with the reason why you want the assessment regraded. The entire assessment will be regraded so if you request a regrade your grade could decrease.

# Syllabus

- **Zoom Link** The department policy is: “for campus immersion (on campus, in-person) courses, we will be able to accommodate students who have COVID or are not feeling well by enabling them to use Sync and join class via Zoom”.
- Email me if you require the Zoom link and the reason why (and please do this some time before the lecture so I don’t miss your email). I strongly encourage you to stay home if you are feeling unwell. Note that exams and other assessment **do** require you to attend in-person or provide proof for your absence (and the exact policies are detailed elsewhere in the syllabus).

# Syllabus

## 1. Weeks 1-5: Monopoly, price discrimination, and an introduction to game theory

- Introduction and review of basic micro (Chapter 2)
- Pricing and monopoly (Chapters 3.1, 3.2, 5)
- Pricing and price discrimination (Chapter 6)
- Game theory (simultaneous and sequential games) (Chapter 7.1, 7.2, and 8.1 if time permits)
- Potentially begin material from weeks 5-9
- Note: Mid-term exam 1 will cover material on this section

# Syllabus

## 2 Weeks 6-10: Models of static competition

- Bertrand and Cournot competition (Chapter 8)
- Stackelberg competition and entry deterrence (Chapter 12.1)
- Hotelling model (Chapter 14., if time permits)
- Potentially begin material from weeks 10-End
- Note: Mid-term exam 2 will *mainly* cover material on this section, but will build on concepts from weeks 1-5.

# Syllabus

## 3 Weeks 11-End: Models of dynamic competition; horizontal and vertical relationships

- Unfinished material from weeks 6-10.
- Market structure (Chapter 10)
- Dynamic oligopoly and collusion (Chapter 7.3, 9)
- Horizontal mergers (Chapter 11)
- Vertical relationships (Chapter 13 - if time permits)
- Recent developments in the field (No textbook link - if time permits)
- Note: The final exam will be cumulative.

## Math requirements for this course

- Common question: what are the math prerequisites for this course?
- I will post some practice exercises online that involve maximizing profits/using derivatives. If you can do these exercises, you're probably fine!
- The first part of the course is (relatively) free of derivatives. But the second and third parts will require you to take derivatives, usually to maximize profit in different contexts.