



# NYU | STERN

## Competitive Analysis

Spring 2021  
Mondays and Wednesdays  
11:00 am - 12:15 pm

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### **Course Description**

This course takes a formal approach to analyzing the way firms make production and sales decisions and interact strategically with each other in the marketplace. We begin with a study of optimal pricing policies, including versioning, bundling, and related market segmentation strategies. In the second part of the course, we apply game theory to the study of oligopoly interaction, focusing on pricing and output strategies in a dynamic setting. Finally, we analyze strategies for firm dominance, especially through the deterrence of potential competition. The list of such strategies includes capacity expansion, product proliferation, and exclusive dealing contracts. The main goal of the course is to develop the basic intuition for pricing and other forms of strategic behavior on the part of firms, both when faced with complex patterns of consumer demand and when faced with strategic competitors. Readings in the textbook will provide background and introduction to a variety of topics, many of which will be covered in class in greater depth. Problem sets will focus on formal analysis. Occasional supplemental readings will provide additional motivation and opportunities to develop intuition.

### **Pre-requisites**

Students are required to have taken a semester of microeconomics, specifically the knowledge of competitive markets and game theory will be assumed. Students are also expected to be comfortable with basic algebra and calculus, including systems of equations, derivatives, logarithms and NPV calculations.

### **Course Material**

Slides: Most of the lectures will be accompanied with slides. These provide access to the core of the material we will cover. Versions of these slides will be available on the class website.

Textbook. There is one required textbook, which is Introduction to Industrial Organization, by Luis Cabral, 2nd Edition (ISBN: 0262035944). The book should be available for purchase at the NYU Bookstore and other outlets (e.g. Amazon). There is also the option of buying or renting the ebook version.

## Course website

All announcements regarding the course will be made on NYU Classes. Besides administrative issues, I may post clarifications on the class material. You are responsible for checking NYU Classes for announcements on a regular basis (i.e., at least a couple of times a week).

## Assessment

Midterm: 30%

Final: 35%

Problem Sets: 20%

Class participation: 15%

## Course policies

*Exams and re-grading.* You are responsible for checking the exam dates and avoiding any conflict with other commitments. Exams will not be re-administered on other dates. During an online exam, you are allowed to consult class notes, books, or any other material, i.e. it is open book. However, you may not confer with your classmates or with anyone else during the exam. Questions about grading must be made in writing and no more than a week after the exams are returned.

*Honor code.* The Stern community believes that honesty and integrity are necessary for rewarding academic and professional experiences. These qualities form the basis for the strong trust among members of the academic community (students, faculty, and administrators) that is essential for excellence in education. The Stern Code of Conduct (available online at <https://nyustern.campusgroups.com/ose/code-of-conduct/>) requires that each student act with integrity in all academic activities and endeavor to hold his or her peers to the same standard.

*Other policies.* Unless explicitly stated otherwise, students should assume that Stern's default policies (available online at <http://www.stern.nyu.edu/portal-partners/registrar/policies-procedures/general-policies-1>) are in force.

## Diversity, inclusion, and equity

I am deeply committed to maintaining a classroom culture that respects and embraces diversity, inclusion, and equity. For more information about NYU Stern's continued efforts in this area, please visit: <https://www.stern.nyu.edu/portal-partners/diversity-inclusion>

## Student Accessibility

If you will require academic accommodation of any kind during this course, you must notify me at the beginning of the course and provide a letter from the Moses Center for Student Accessibility (212-998-4980, [mosescsa@nyu.edu](mailto:mosescsa@nyu.edu)) verifying your registration and outlining the accommodations they recommend. If you will need to take an exam at the Moses Center for Student Accessibility, you must submit a completed Exam Accommodations Form to them at least one week prior to the scheduled exam time to be guaranteed accommodation. For more information, visit the CSA website: <https://www.nyu.edu/students/communities-and-groups/student-accessibility.html>

## **Course Schedule and Readings (to be completed before class)**

### **Part I: Demand and Pricing**

#### **1. Monday, February 1: Introduction and overview**

Reading: Cabral, Introduction to Industrial Organization, 2nd Ed., Ch. 1.

#### **2. Wednesday, February 3: Demand and elasticity**

Reading: Cabral, 2.1-2.2

#### **3. Monday, February 8: Supply and monopoly pricing**

Reading: Cabral 3.1-3.2

#### **4. Wednesday, February 10: Demand estimation**

Reading: Cabral 2.2-2.3

Mini-case: Monsanto's Roundup. Discussion.

Problem Set 1 due by 10 am on that day

#### **5. Wednesday, February 17: Price discrimination by indicators**

Reading: Cabral 6.1

#### **6. Thursday, February 18: Price discrimination by self-selection**

Reading: Cabral 6.2-6.3

Problem Set 2 due by 10 am on that day

#### **7. Monday, February 22: Pricing in practice**

Mini-case: Merck and Aids. Discussion.

### **Part II: Static Oligopoly Analysis**

#### **8. Wednesday, February 24: Game Theory – static games**

Reading: Cabral 7.1

#### **9. Monday, March 1: Oligopoly Competition**

Reading: Cabral 8.1-8.2

Problem Set 3 due by 10 am on that day

**10. Wednesday, March 3: Product differentiation and capacity constraints**

Reading: Cabral 14.2

**11. Monday, March 8: Oligopoly models at work**

Reading: Cabral 8.3-8.4

**12. Wednesday, March 10: Midterm exam review**

**13. Monday, March 15: Midterm exam**

**Part III: Dynamic Oligopoly Analysis**

**14. Wednesday, March 17: Repeated interaction and collusion**

Reading: Cabral 7.3, 9.1

**15. Monday, March 22: Collusion and price wars**

Reading: Cabral 9.2-9.4

**16. Wednesday, March 24: Collusion - empirical analysis and public policy**

Mini-case: GE and Westinghouse

Reading: Cabral 9.5

**Part IV: Entry and Exit**

**17. Monday, March 29: Market Structure**

Reading: Cabral 10

Problem Set 4 due by 10 am on that day

**18. Wednesday, March 31: Horizontal Mergers**

Reading: Cabral 11.1-11.2

**19. Monday, April 5: Horizontal mergers - policy**

Reading: Cabral 11.3

Mini-case: The Failed GE-Honeywell Merger. Discussion.

**20. Wednesday, April 7: Sequential games and commitment**

Reading: Cabral 7.2

**21. Monday, April 12: Entry deterrence**

Reading: Cabral 12.1

**22. Wednesday, April 14: Market foreclosure**

Reading: Cabral 12.2

Problem Set 5 due by 10 am on that day

**23. Wednesday, April 21: Market foreclosure – policy**

Reading: Cabral 12.3

Mini-case: Microsoft. Discussion.

**24. Monday, April 26: Vertical relations**

Reading: Cabral 13.1

**25. Wednesday, April 28: Vertical integration, restraints, and policy**

Reading: Cabral 13.2

Mini case: AT&T and Time-Warner

**26. Monday, May 3: Networks, I**

Reading: Cabral 16

Problem Set 6 due by 10 am on that day

**27. Wednesday, May 5: Networks, II**

Reading: Cabral 16

**28. Monday, May 10: Final Exam Review**