

## Economics 667(L01) Industrial Organization

Instructor: Arvind Magesan  
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Lecture Location: Zoom delivery  
Lecture Days/Time: TR 09:30-10:45

Office: ZOOM Delivery  
Office Hours: By Appointment

(Winter 2021)

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### Course Description:

This course develops a basic toolbox for analyzing markets – how they work and when they fail. In particular, we will develop and study a collection of theoretical models that IO economists use to think about the way firms acquire and exercise market power, as well as the welfare implications of firm behavior. While the primary focus is on the theory of IO, at points we will also discuss how the models are combined with data to empirically study the functioning of real-world markets.

### Course Outcomes:

By the end of the course, students will have a framework for understanding markets. They will be able to interpret and explain outcomes in real world markets using the models developed in the course. They will also have a basic understanding about how theoretical models can be taken to data and used to answer questions of policy relevance.

### Course Outline:

The course will loosely follow Jean Tirole's book (see below), supplemented with my own notes in places and other books and articles. Here is a very optimistic timeline for what we will cover.

1. Introduction: What is a firm? A market? An Industry? A Consumer? (Tirole Intro and "Theory of the firm")
2. Preliminaries: Review of some basic building blocks in IO – Demand, cost etc. (My Notes, Tirole Intro)
3. Estimating a demand function from data (My notes)
4. Monopoly (Tirole Ch 1-3):
  - a) Price setting: The Single Product Monopolist. Response to government intervention. Welfare Implications.
  - b) Price setting: The Multi Product Monopolist.
  - c) Simple Dynamics: Durable goods, learning.
  - d) Decisions other than price/quantity:
    - i) Product selection
    - ii) Product quality
    - iii) Advertising
  - e) Non-uniform pricing (Price discrimination)
    - i) Perfect discrimination
    - ii) 3<sup>rd</sup> degree discrimination
    - iii) 2<sup>nd</sup> degree discrimination

- f) **Time Permitting:** Vertical Control (Tirole, Ch 4)
- 5. Oligopoly - Strategic Interaction Between firms (Tirole Ch 5-9, my notes):
  - a) Short run competition on Price (Bertrand) and on Quantity (Cournot). Welfare and industry outcomes.
  - b) Bringing data to models of price and quantity competition.
  - c) Long run competition: Simple dynamics.
  - d) Collusion and Cartels
  - e) Product differentiation: competition on price and competition through other strategic variables.
  - f) Endogenous market participants: Entry and Exit.
- 6. Bringing data to models of Entry/Exit.
- 7. Other Topics (mostly my notes):
  - a) Auctions, Theory and Intro Empirics
  - b) Consumer side frictions: Search
  - c) Industrial Organization of the Internet
  - d) Other? (Student interest)

More detail about readings will be provided “on the fly.”

**Graduate Students interested in “Empirical IO”:** As the Department of Economics is offering only one course in Industrial Organization this year, and solid foundation in IO theory is a pre-requisite for doing serious empirical IO, this course is light on empirics and heavy on theory. If you have an interest in Empirical IO, please speak to me. There will be an empirical IO course next year, but we could perhaps set up some readings outside of class.

**Prerequisites/corequisites:**

ECON 657

**Required Textbook(s):**

*The Theory of Industrial Organization.* Jean Tirole. MIT Press 1988.

**Recommended Textbook(s):**

*Quantitative Techniques for Competition and Antitrust.* Peter Davis and Eliana Garces.

*Industrial Organization: A Strategic Approach.* Jeffrey Church and Roger Ware.

**Books on Reserve:**

*The Theory of Industrial Organization.* Jean Tirole. MIT Press 1988.

**Term Project:**

In lieu of a traditional “Final Exam,” you will be tasked with a project, where you use the tools developed in class to study a particular industry or market. You can (with my approval) choose whatever industry or market interests you. Whatever you choose, the title of your project will be “The Industrial Organization of the XXXXXX Market.” Examples of markets: baseball cards, food trucks, vinyl records, the resale market for Kaleshnikov rifles, wine, coal, etc. The list of options is long and very interesting.

You also have considerable flexibility in terms of how you go about it. What I want to see is that you are able to take an industry or market and apply the tools we have learned in the class to thoroughly analyze the market and how firms have behaved in the market.

You should start thinking about it very early (now) and we should agree on a market within the first couple weeks of class. I would like brief progress reports every couple weeks after that, either in “office hours” or by email. We will discuss this in more detail in the first class.

**Online Delivery:**

This course will be delivered online. Students are expected to be able to participate online in accordance with this Course Outline. Lectures, assignments, office hours, exams, readings and other course material, etc. all require online access and this access is the responsibility of the student. The instructor will make an effort to provide reasonable accommodations and flexibility as circumstances require. Students are expected to raise with the instructor at the beginning of the semester any potential concerns that require such accommodations.

In order to remotely participate in online courses, students will need to have: computer with a current and updated operating system (macOS or Windows will work with all university-supported online learning technologies), a current and updated web browser installed – the latest versions of Firefox, Safari, Chrome or Edge will help to avoid compatibility issues, secure and reliable internet, microphone / headphones, webcam (optional), scanner (or camera to scan your work).

**Desire2Learn:**

This course will make use of the Desire2Learn (D2L) platform. Students who are registered in the course can log on at <http://d2l.ucalgary.ca> through their student centre. Please note that D2L features a class e-mail list that may be used to distribute course-related information. These e-mails go to your University of Calgary e-mail addresses only.

**Lectures:**

Lectures will be delivered online at the Registrar scheduled times and delivered using ZOOM. The lectures will be recorded and subsequently posted to D2L.

**Grade Determination/Assessment:**

MIDTERM EXAM (Mid-March)	20%
ASSIGNMENTS	40%
TERM PROJECT	<u>40%</u>
	100%

**Grade Determination and Final Examination Details**

Department of Economics Criteria for Letter Grades. Economics professors use the following criteria when assigning letter grades:

Grade	Grade Point Value	Description
A+	4.00	Outstanding
A	4.00	Excellent-superior performance, showing-comprehensive understanding of subject matter
A-	3.70	Very good performance
B+	3.30	Good performance
B	3.00	Satisfactory performance
B-	2.70	Minimum pass for students in the Faculty of Graduate Studies
C+	2.30	All grades below "B-" are indicative of failure at the graduate level and cannot be counted toward Faculty of Graduate Studies course requirements. Individual programs may require a higher passing grade.

A passing grade on any particular component of the course is not required for a student to pass the course as a whole.

Tests and exams **WILL NOT** involve multiple choice questions.

### **Absence from a Test/Exam**

THERE WILL BE NO MAKEUP OR DEFERRED QUIZZES under any circumstances, nor may the quizzes be written early. Students unable to write the quizzes because of documented illness, family emergency, religious observance, or university-sanctioned event will have the weight shifted to the final examination; otherwise a grade of zero will be assigned. If a student cannot write their final exam on the date assigned by the Department, they need to arrange for a deferred exam with the department.

### **Reappraisal of Grades and Intellectual Honesty:**

*For reappraisal of graded term work, see Calendar I.2*

<http://www.ucalgary.ca/pubs/calendar/current/i-2.html>

*For reappraisal of final grade, see Calendar I.3*

<http://www.ucalgary.ca/pubs/calendar/current/i-3.html>

### **ACADEMIC MISCONDUCT**

Academic Misconduct refers to student behavior that compromises proper assessment of students' academic activities and includes: cheating; fabrication; falsification; plagiarism; unauthorized assistance; failure to comply with an instructor's expectations regarding conduct required of students completing academic assessments in their courses; and failure to comply with exam regulations applied by the Registrar.

Student committing academic misconduct during the final exam will not receive a passing grade on the course.

For information on the Student Academic Misconduct Policy and Procedure please visit:

<https://ucalgary.ca/policies/files/policies/student-academic-misconduct-policy.pdf>

<https://ucalgary.ca/policies/files/policies/student-academic-misconduct-procedure.pdf>

Additional information is available on the Academic Integrity Website at <https://ucalgary.ca/student-services/student-success/learning/academic-integrity>.

### **Academic Accommodations:**

Students seeking an accommodation based on disability or medical concerns should contact Student Accessibility Services; SAS will process the request and issue letters of accommodation to instructors. Students who require an accommodation in relation to their coursework based on a protected ground other than disability should communicate this need in writing to their Instructor. The full policy on Student Accommodations is available at <http://www.ucalgary.ca/policies/files/policies/student-accommodation-policy.pdf>.

### **Freedom of Information and Protection of Privacy (FOIP) Act:**

Personal information is collected in accordance with FOIP. Assignments can only be returned to the student and will be accessible only to authorized faculty and staff. For more information, see

<http://www.ucalgary.ca/legalservices/files/legalservices/faq-students.pdf> and

[http://www.ucalgary.ca/legalservices/files/legalservices/faq-faculty\\_0.pdf](http://www.ucalgary.ca/legalservices/files/legalservices/faq-faculty_0.pdf).

**Internet and Electronic Communication Device information:**

The use of cell phones for any purpose in class is prohibited. Computers and tablets may be used for note taking only unless otherwise authorized by the instructor.

**Copyright Legislation:**

See the University of Calgary policy on Acceptable Use of Material Protected by Copyright at [www.ucalgary.ca/policies/files/policies/acceptable-use-of-material-protected-by-copyright.pdf](http://www.ucalgary.ca/policies/files/policies/acceptable-use-of-material-protected-by-copyright.pdf). Students who use material protected by copyright in violation of this policy may be disciplined under the Non-Academic Misconduct Policy.

**Recording of Lectures:**

Recording of lectures is prohibited, except for audio recordings authorized as an accommodation by SAS or an audio recording for individual private study and only with the written permission of the instructor. Any unauthorized electronic or mechanical recording of lectures, their transcription, copying, or distribution, constitutes academic misconduct. See <https://www.ucalgary.ca/pubs/calendar/current/e-6.html>.

**Important Dates:**

Please check: <http://www.ucalgary.ca/pubs/calendar/current/academic-schedule.html>

**Student Organizations:**

Faculty of Grad Studies website: <http://grad.ucalgary.ca/home>

Graduate Students Association: <http://gsa.ucalgary.ca/>

Professional Development for Grad Students

Workshops and resources can be found at <http://www.ucalgary.ca/mygradskills/>

Economics Graduate Association: <http://econ.ucalgary.ca/ega/>

**Student Support and Resources:**

- See <https://www.ucalgary.ca/registrar/registration/course-outlines> for information on campus mental health resources, the Student Ombuds' Office, Student Success Centre, Safewalk, and Emergency Evacuation and Assembly.
- Online writing resources are available at <https://ucalgary.ca/student-services/student-success/writing-support>.
- For registration (add/drop/swap), paying fees and assistance with your Student Centre, contact Enrolment Services at 403-210-ROCK [7625] or visit them in the MacKimmie Library Block.

**Notes:**

Students are responsible for all assigned material, e.g., supplementary material posted on D2L, regardless of whether or not the material was covered in class.

ANM

2021-12-07