

ECON 4697-001 INDUSTRIAL ORGANIZATION & REGULATION

Instructor: Professor Scott James Savage

Office: ECON 121 (north-west corner of ground floor in economics building)

Address: Department of Economics, 256 UCB, Boulder, Colorado 80309-0256

Email: scott.savage@colorado.edu Phone: 303-735-1165 Fax: 303-492-8960

Short CV: <https://www.colorado.edu/economics/sites/default/files/attached-files/savage.pdf>

Office hours: T & TH 2.15-3.45pm or by appointment

Class time and location: T & TH 12.30-1.45pm, HLMS 267

Course Description

Industrial Organization & Regulation studies firm behavior in markets where the assumptions of perfect competition do not hold. The main focus is on the firm's choice of price, quantity of output, quality, and location, and how public policy is used to promote competitive outcomes and control market power. The course comprises four parts. Part I introduces industrial organization. Part II examines monopoly pricing and firm location decisions. Oligopoly competition is studied in Part III. Part IV introduces some of the empirical tools used to study industrial organization.

The method of instruction asks fundamental questions about the market behavior of firms and consumers and answers those questions through casual observation, theoretical and empirical modeling, and experiments. Experiments can be conducted in the "laboratory", for example, classroom, focus groups, surveys, counterfactual analysis, etc., and in the market by way of a natural experiment. A natural experiment is a policy change that occurs for reasons not related to the outcome variable of interest. For example, "random" electricity market deregulation that permits wholesale competition in some states ("treatment group"), but not in other states ("control group").

Objectives

Use the economic tools learned in *ECON 3070 Intermediate Microeconomic Theory* to understand optimal decision making by firms and policy makers under conditions of imperfect competition.

Become comfortable using algebra, calculus and diagrams to model different kinds of firm interactions.

Continue to develop critical thinking, oral and written communication skills with class room interaction, homework assignments, and examinations.

Help you identify errors in economic analysis in the popular press and wider community.

Prerequisites

Available to students who have completed *ECON 3070 Intermediate Microeconomic Theory*. Students should be familiar with microeconomic principles, algebra, calculus, optimization techniques and probability covered in prerequisite classes (*ECON 1088*

Math Tools for Economists 2 and *ECON 3818 Intro to Economic Statistics & Computer Applications*), and be comfortable expressing these concepts in short-answer questions in homework assignments and examinations.

Textbooks

There is no required textbook. Appropriate readings will be indicated during lectures and updated on Canvas. Outlines of my notes will be provided on Canvas. *Introduction to Industrial Organization* by Luis Cabral (MIT Press) and *Industrial Organization: Contemporary Theory and Empirical Applications* by Lynne Pepall, Dan Richards and George Norman (Wiley) are useful supplementary texts. Your textbook from *ECON 3070 Intermediate Microeconomic Theory*, for example, *Microeconomics* by David Besanko and Ronald Braeutigam (Wiley), or *Intermediate Microeconomics: A Modern Approach* by Hal Varian (Norton), should also be helpful.

Class requirements

The class meets Tuesday and Thursday from 12.30pm to 1.45pm. Please be aware that the critical thinking required for successful completion of this course may not come naturally for many students. In-class exposure to model building, group discussion, applied problems and solutions is the best way to become proficient in the application of microeconomic theory and the way economists think and solve problems.

Craig and Savage (2014) show that a ten percent increase in attendance is associated with a one percentage point improvement in final exam score for undergraduate industrial organization students, which could mean the difference between a grade of B- and C+. See “Instructor Attire and Student Performance: Evidence from an Undergraduate Industrial Organization Experiment,” *International Review of Economics Education*, 2014, 17, 55-65.

Feel free to form study groups to review and discuss lecture/reading material, homework assignments etc., but you must submit individual work for grading (note: if you work with a study group or individual class mates on assignments, please list the names of these persons on the front page of your submitted assignment).

Students should:

- (a) attend two 75-minute lectures per week;
- (b) review and augment notes after the lectures;
- (c) be punctual, polite and respectfully engage in class discussion;
- (d) complete (a minimum of six out of seven) homework assignments;
- (e) complete one mid-term quiz;
- (f) complete one mid-term examination; and
- (g) complete one final examination.

There will be no cellular phone use in this class. Phone use by students distracts my teaching and other student’s learning. Please do not use your phone to talk, text, chat, go online, etc. in class. The one exception is that you may use your phone to take photographs of my lecture notes on the chalk board. If you violate these rules, I will ask you to leave the classroom immediately.

Students with open laptops, tablets or other devices must sit in the very last row of the classroom. Laptop and tablet use by students distracts my teaching and other student's learning. There are lecture notes on D2L which you can bring to class, and focus on my teaching. If you want to use a computer for note taking, please sit in the very last row of the classroom so as not to distract other students. If you violate these rules, I will ask you to leave the classroom immediately.

If you have any suggestions for my phone, laptop, and tablet policies (or require an exemption), please discuss these with me during the first week of class. Thank you.

Recent research highlights some of the negative impacts of laptops and tablets in the classroom. **Mueller and Oppenheimer (2014)** had 67 undergraduates watch lecture videos. Half were assigned to watching the lectures and taking notes on a laptop. The other half watched lectures while taking notes traditionally with paper and a pen. All students were then given an exam, and those who took notes with a laptop scored much lower on conceptual questions than those that did not. See "The Pen Is Mightier Than the Keyboard: Advantages of Longhand Over Laptop Note Taking", *Psychological Science*, 2014, 25, 1159-1168.

Grading

There will be seven homework assignments (with the lowest score dropped from the overall homework grade), one mid-term quiz, one mid-term examination, and one final examination. The weights for these assessments are:

Homework assignments	(6 × 5 %)	30 %
Mid-term quiz	(1 × 20 %)	20 %
Mid-term examination	(1 × 25 %)	25 %
Final examination	(1 × 25 %)	25 %

Homework questions will consist of short-answer and problem solving questions that require students to use diagrammatic, mathematical and written skills to prove their answers (i.e., please provide an appropriate method and/or logical steps to prove your answer). The presentation of your homework solutions will count in your assignment grade. Please take the time to clearly and neatly write out mathematical and graphical answers. Basic requirements for presentation include: name on first page; staple pages; place page numbers on each page; clearly title and label any graphs, tables, etc.; and ensure mathematical notation is clearly legible and readable. An electronic word document helps to ensure neat presentation, but it is not necessary. Homework must be submitted before the beginning of the class lecture (i.e., within the first five minutes) on the due date. Late submissions will incur a 25 percent penalty. No homework will be accepted after the class on the due date.

The mid-term quiz will (largely) be a multiple-choice questionnaire. The mid-term and final examinations will consist of short-answer and problem solving questions similar to homework questions and class applications. You may need a basic non-programmable calculator to perform calculations during the quiz and examinations (I will let you know beforehand).

There will be no make-up homework assignments or examinations unless there is a proven emergency or other unusual circumstances that have been discussed with the instructor prior to submission/completion dates. If you are aware of any problems that may hinder your performance in the class please discuss with the instructor sooner than later. Any student that misses the mid-term examination or quiz due to proven emergency or other circumstances may have their final exam weighted up with instructor approval.

The final examination is scheduled for Sunday, December 15, 4.30-7pm. See https://www.colorado.edu/registrar/sites/default/files/attached-files/fall2019final_exam_schedule.pdf

Important dates for assessment

Sep 10	Homework 1
Sep 17	Homework 2
Oct 1	Homework 3
Oct 15	Mid-term examination
Oct 22	Homework 4
Oct 29	Homework 5
Nov 12	Mid-term quiz
Nov 26	Homework 6
Dec 10	Homework 7
Dec 15	Final examination

The Department of Economics provides a free drop-in tutorial office which provides assistance on all courses in the major, and occasionally on other undergraduate courses within the Department. More information is available at:

<https://www.colorado.edu/economics/undergraduate/drop-tutorial-lab>.

Campus and department policies

The Department of Economics enforces prerequisites. Students without the appropriate prerequisite(s) may be administratively dropped.

Students and faculty each have responsibility for maintaining an appropriate learning environment. Those who fail to adhere to such behavioral standards may be subject to discipline. Professional courtesy and sensitivity are especially important with respect to individuals and topics dealing with differences of race, culture, religion, politics, sexual orientation, gender, gender variance, and nationalities. Class rosters are provided to the instructor with the student's legal name. I will gladly honor your request to address you by an alternate name or gender pronoun. Please advise me of this preference early in the semester so that I may make appropriate changes to my records. For more information, see the policies on [classroom behavior](#) and the [Student Code of Conduct](#).

The University of Colorado Boulder (CU Boulder) is committed to fostering a positive and welcoming learning, working, and living environment. CU Boulder will not tolerate acts of sexual misconduct (including sexual assault, exploitation, harassment, dating or domestic violence, and stalking), discrimination, and harassment by members of our community. Individuals who believe they have been subject to misconduct or retaliatory

actions for reporting a concern should contact the Office of Institutional Equity and Compliance (OIEC) at 303-492-2127 or cureport@colorado.edu. Information about the OIEC, university policies, [anonymous reporting](#), and the campus resources can be found on the [OIEC website](#).

Please know that faculty and instructors have a responsibility to inform OIEC when made aware of incidents of sexual misconduct, discrimination, harassment and/or related retaliation, to ensure that individuals impacted receive information about options for reporting and support resources.

All students enrolled in a University of Colorado Boulder course are responsible for knowing and adhering to the Honor Code. Violations of the policy may include: plagiarism, cheating, fabrication, lying, bribery, threat, unauthorized access to academic materials, clicker fraud, submitting the same or similar work in more than one course without permission from all course instructors involved, and aiding academic dishonesty. All incidents of academic misconduct will be reported to the Honor Code (honor@colorado.edu; 303-492-5550). Students who are found responsible for violating the academic integrity policy will be subject to nonacademic sanctions from the Honor Code as well as academic sanctions from the faculty member. Additional information regarding the Honor Code academic integrity policy can be found at the [Honor Code Office website](#).

If you qualify for accommodations because of a disability, please submit your accommodation letter from Disability Services to your faculty member in a timely manner so that your needs can be addressed. Disability Services determines accommodations based on documented disabilities in the academic environment. Information on requesting accommodations is located on the [Disability Services website](#). Contact Disability Services at 303-492-8671 or dsinfo@colorado.edu for further assistance. If you have a temporary medical condition or injury, see [Temporary Medical Conditions](#) under the Students tab on the Disability Services website.

Campus policy regarding religious observances requires that faculty make every effort to deal reasonably and fairly with all students who, because of religious obligations, have conflicts with scheduled exams, assignments or required attendance. In this class, please indicate by email, by the end of the first week, if there is a conflict. See the [campus policy regarding religious observances](#) for full details.

Class schedule, lectures, homework, etc.

Proposed topics are presented below. Please note that the topic schedule is subject to change during the term depending on how fast we work through the material.

Class lectures, assignments, solutions and additional reading materials will be available, where appropriate, via Canvas.

Please check Canvas and the syllabus regularly for any potential changes.

Table 1. Proposed course outline

Week	Date	Topic
1.	Aug 27, 29	I. Introduction - Introduction to industrial organization.
2.	Sep 3, 5	II. Monopoly power - Monopoly pricing
3.	Sep 10 Sep 12	- Monopoly pricing - Product positioning
4.	Sep 17, 19	- Product positioning
5.	Sep 24, 26	- Price discrimination I (two-part tariffs)
6.	Oct 1 Oct 3	- Price discrimination I (two-part tariffs) - Price discrimination II (versioning, bundling, etc.)
7.	Oct 8, 10	- Price discrimination II (versioning, bundling, etc.)
8.	Oct 15 Oct 17	- <i>Mid-term examination</i> III. Oligopoly competition - Quantity competition
9.	Oct 22, 24	- Quantity competition
10.	Oct 29, 31	- Price competition
11.	Nov 5 Nov 7	- Price competition - Collusion
12.	Nov 12 Nov 14	- <i>Mid-term quiz</i> - Collusion
13.	Nov 19, 21	- <i>No classes: Fall break & Thanksgiving</i>
14.	Nov 26, 28	- Mergers
15.	Dec 3, 5	IV. Empirical industrial organization - Consumer demand
16.	Dec 10, 12	- Consumer demand
17.	Dec 15	- <i>Final examination</i>