

ECON 4697-001 INDUSTRIAL ORGANIZATION & REGULATION

Instructor: Professor Scott James Savage

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Short CV: <http://www.colorado.edu/Economics/people/faculty/savage.html>

Office hours: T & TH 12.30-1.30pm or by appointment

Class time and location: T & TH 2-3.15pm, ECON 117

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 behavior is studied in Part III. Part IV examines product differentiation and 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. For example, 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 the economics of firms and markets, and optimal decision making by firms and policy makers under conditions of imperfect competition.

Become more 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 participation, homework questions, quizzes 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 for this class. Appropriate readings will be indicated during lectures and updated on Desire2Learn. Outlines of my lecture notes will be provided on Desire2Learn. *Introduction to Industrial Organization* by Luis Cabral, (MIT Press) is a useful supplementary text. As is 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).

Class requirements

The class meets Tuesday and Thursday from 2pm to 3.15pm. 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 exercises, applied problems and solutions via class attendance 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) complete (a minimum of five out of six) homework assignments;
- (d) complete one quiz;
- (e) complete one mid-term examination; and
- (f) complete one final examination.

Students are expected to be punctual and polite, and to respectfully engage in discussion with the instructor and class mates. See <http://colorado.edu/policies/classbehavior.html> for University of Colorado policies on student classroom and course-related behavior.

There will be no cellular phones in this class. Cellular phone use by students distracts my teaching, and other student's learning. Please turn off your cellular phone before entering class and keep the phone out of sight, i.e., place it in your bag, pocket, or purse. If I see you using your phone without permission, you will be told to leave the class.

There will be no open laptops, tablets or other devices in this class. Laptop and tablet use by students distracts my teaching, and other student's learning. There are lecture notes on Desire2Learn which you can bring to class, and focus on my teaching. If I see you using your laptop or tablet without permission, you will be told to leave the class.

If you have any suggestions for my cellular phone, laptop, and tablet policy, please discuss these with me during the first week of class. Thank you kindly.

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

Homework assignments	$(5 \times 7 \%)$	35 %
Quiz	$(1 \times 15 \%)$	15 %
Mid-term examination	$(1 \times 25 \%)$	25 %
Final examination	$(1 \times 25 \%)$	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 and final examinations will consist of short-answer and problem solving questions similar to homework questions and class applications. You will need a basic non-programmable calculator to perform calculations during the exams.

There will be no make-up homework assignments, quizzes 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 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 due to proven emergency or other circumstances may have their final exam weighted up with instructor approval.

The final examination is scheduled for December 19, 1.30-4pm. See http://www.colorado.edu/registrar/sites/default/files/attached-files/fall2017final_exam_schedule.pdf.

Important dates for assessment

Sep 12	Homework 1
Sep 19	Homework 2
Oct 3	Homework 3
Oct 17	Mid-term examination
Oct 31	Homework 4
Nov 14	Quiz
Nov 28	Homework 5
Dec 12	Homework 6
Dec 19	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. The website is available at:

<http://www.colorado.edu/Economics/undergraduate/tutorial-lab.pdf>.

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. See policies at

<http://www.colorado.edu/policies/classbehavior.html> and at

http://www.colorado.edu/studentaffairs/judicialaffairs/code.html#student_code

The University of Colorado at Boulder policy on Discrimination and Harassment, the University of Colorado policy on Sexual Harassment and the University of Colorado policy on Amorous Relationships apply to all students, staff and faculty. Any student, staff or faculty member who believes s/he has been the subject of discrimination or harassment based upon race, color, national origin, sex, age, disability, religion, sexual orientation, or veteran status should contact the Office of Discrimination and Harassment (ODH) at 303-492-2127 or the Office of Judicial Affairs at 303-492-5550. Information about the ODH, the above referenced policies and the campus resources available to

assist individuals regarding discrimination or harassment can be obtained at <http://www.colorado.edu/odh>.

All students of the University of Colorado at Boulder are responsible for knowing and adhering to the academic integrity policy of this institution. Violations of this policy may include: cheating, plagiarism, aid of academic dishonesty, fabrication, lying, bribery, and threatening behavior. All incidents of academic misconduct shall be reported to the Honor Code Council (honor@colorado.edu; 303-725-2273). Students who are found to be in violation of the academic integrity policy will be subject to both academic sanctions from the faculty member and non-academic sanctions (including but not limited to university probation, suspension, or expulsion). Other information on the Honor Code can be found at <http://www.colorado.edu/policies/honor.html> and at <http://www.colorado.edu/academics/honorcode/>.

Disability Services' letters for students with disabilities indicate legally mandated reasonable accommodations. The syllabus statements and answers to Frequently Asked Questions can be found at <http://www.colorado.edu/disabilityservices>.

Campus policy regarding religious observances requires that faculty make every effort to reasonably and fairly deal with all students who, because of religious obligations, have conflicts with scheduled exams, assignments or required attendance. In this class, please indicate by email, near the beginning of the semester, if there is a conflict. See full details at http://www.colorado.edu/policies/fac_religh.html.

A complete up-to-date list of the University's policy statements is available at: <http://www.colorado.edu/academicaffairs/policies-customs-guidelines/required-syllabus-statements>.

Class schedule, lectures, homework, etc.

Proposed topics are provided in the table below. Please note that the outline of topics is subject to change during the term depending on how fast we work through the proposed topics. All changes will be announced in class and online via the class website through Desire2Learn.

Class lecture handouts, assignment questions, solutions and additional reading materials will be made available when appropriate via the Desire2Learn website. You can access your course materials by going to the Desire2Learn login page and signing in with your CU Login Name and Identikey Password.

Please check the Desire2Learn website and syllabus regularly for changes.

Table 1. Proposed course outline

Week	Date	Topic
1.	Aug 29 Aug 31	Part I. Introduction - Introduction to course - What is industrial organization (IO)?
2.	Sep 5 Sep 7	- The firm Part II. Monopoly power - Monopoly pricing (pure monopoly, monopolistic competition)
3.	Sep 12 Sep 14	- Monopoly pricing (pure monopoly, monopolistic competition) - Regulation
4.	Sep 19 Sep 21	- Regulation - Product positioning
5.	Sep 26, 28	- Product positioning
6.	Oct 3, 5	- Price discrimination
7.	Oct 10, 12	- Versioning, tie-in sales
8.	Oct 17 Oct 19	- Mid-term exam Part III. Oligopoly - Price competition
9.	Oct 24 Oct 26	- Price competition - Quantity competition
10.	Oct 31 Nov 2	- Quantity competition - Quantity competition
11.	Nov 7, 9	- Collusion
12.	Nov 14 Nov 16	- Quiz Part IV. Empirical IO - Market structure & market power
13.	Nov 21, 23	- <i>No classes: Fall break & Thanksgiving</i>
14.	Nov 28 Nov 30	- Market structure & market power - Consumer demand
15.	Dec 5 Dec 7	- Consumer demand - Product differentiation & market power
16.	Dec 12, 14	- Topics to be determined
17.	Dec 19	- Final examination