

ECON 4697-001 INDUSTRIAL ORGANIZATION & REGULATION

Instructor: Professor Scott James Savage

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Class time and location: TTH 9.30 to 10.45am, ECON 119

Course Description

The course studies firm behavior in markets where the assumptions of perfect competition do not hold. The 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: (i) introduction; (ii) price theory; (iii) oligopoly competition; and (iv) regulation and public policy.

Advanced questions are asked about the choices of firms, consumers and policy makers. Theory will be used to obtain insight on economic behavior and to conduct theoretical experiments with comparative statics analysis. In these experiments, the economic model will be shocked with an economic or policy "treatment" and the pre- and post-treatment equilibria results will be compared.

Learning objectives and outcomes

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.

Be comfortable using algebra, calculus and diagrams to model different kinds of interactions between firms, consumers, and policymakers.

Illustrate the causes and consequences of market failure in imperfectly competitive markets and suggest suitable public policy solutions.

Develop and use critical thinking, oral and written communication skills with classroom interactions, office hours, homework assignments, and examinations.

Demonstrate an understanding of the philosophy of economics. Identify errors in economic analysis in the popular press and the 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 their prerequisite classes (*ECON 1088 Math Tools for Economists 2* and *ECON 3818 Intro to Economic Statistics & Computer*

Applications). Be comfortable expressing these concepts in short-answer questions in homework assignments and examinations.

You will need access to a high-speed Internet connection, a printer and/or scanner to submit your homework and complete this course. For individual assistance, please see: <https://oit.colorado.edu/services/learning-spaces-technology/student-printing-and-scanning/locations>.

Instruction Mode and Office Hours

I will conduct in-person classes on Tuesday and Thursday that will include lectures, problems and answers to your questions. Lecture notes, problems, solutions, etc. will be available through Canvas.

Except for the first two weeks of the semester, I will be available for in-person consultations on Tuesday and Thursday from 12.15 to 1.45pm. Please visit my office or email your carefully written questions.¹

Your email should be somewhat formal and include an appropriate greeting (e.g., “Hello Professor Savage”) and goodbye (e.g., “Regards, Scott”). Please identify the class you are in (e.g., “ECON 4687”) and send your email during appropriate business hours. Take your time and think carefully about what you want to ask me and read it over before you hit “send.” Try to imagine that you are at your future place of employment, and you are corresponding with an important business associate, client, or manager that you would like to impress. Please do not make broad statements like “I cannot do question 4” or “I do not understand question 5.” Be specific and tell me exactly what you understand and do not understand about the question you are working on, so I can help you.

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 (John Wiley & Sons) are useful supplementary textbooks. Your textbook from *ECON 3070 Intermediate Microeconomic Theory*, for example, *Microeconomics* by David Besanko and Ronald Braeutigam (John Wiley & Sons), or *Intermediate Microeconomics: A Modern Approach* by Hal Varian (W.W. Norton and Company).

Class requirements

The critical thinking required for successful completion of this course may not come naturally for many students. Classroom exposure to model building, group exercises, 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.

¹ Virtual office hours will be offered during the first two weeks of the semester.

For safety and administration reasons, please try to sit in the same seat throughout the semester. I may take attendance sometimes for my administrative records, but there will be no formal penalty for non-attendance.

Please inform me immediately if an unforeseen emergency, illness or safety concern impacts your performance. I can help, but I need to know your circumstances as soon as possible to consider suitable alternative arrangements.

Feel free to form study groups to review and discuss lecture/reading material, homework assignments etc. However, you must submit your own individual work for grading. If you work with classmates on assignments, please list the names of these persons on the front page of your individually submitted assignment.²

To successfully complete the class, each student should:

- (a) attend two 75-minute classes each week;
- (b) review and augment lecture notes after class;
- (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;
- (g) complete one final examination;
- (h) cooperate with your classmates and your Professor; and
- (i) carefully practice the University's health and safety measures.

Cellular phones, laptops, tablets and other devices. You may use your devices for learning, e.g., electronic notetaking, photographs of the chalk board, etc., and to practice appropriate health and safety measures. Please do not use your device for calls, texts, social media and online activities, etc. during class. If you use your devices for activities that distract me or other students, I will ask you to leave the class immediately.

Grading

There will be seven homework assignments (with the lowest score dropped from the overall homework grade)³, one mid-term quiz, one mid-term examination, and one final examination. The weights for these assessments are:

Homework assignments	(6 × 10 %)	60 %
Mid-term quiz	(1 × 10 %)	10 %
Mid-term examination	(1 × 15 %)	15 %
Final examination	(1 × 15 %)	15 %

² More generally, follow the honor code when completing your assessments. My penalty for code violations may include expulsion from the class, along with referral to the university's honor code council.

³ I strongly recommend that you aim to complete all seven homework assignments and save your potential "drop" for an unforeseen emergency.

Homework will consist of short-answer and problem-solving questions that require you to use diagrammatic, mathematical and written skills to prove your answers (i.e., provide an appropriate method and/or logical steps). Homework presentation will count for 20 percent of each of your assignment grades. Please write your mathematical and graphical answers clearly and smartly. Basic requirements for presentation include your name and homework heading, page numbers, appropriate labels for figures, graphs, tables, etc., clear and transparent economic and mathematical notation, and good grammar and flow. You may use a word processor and/or write neatly with a pen (see Canvas for an example solution). Homework must be saved as a single pdf file and uploaded to Canvas before 5pm on the due date. Submissions at 5pm and after on the due date will incur a 25 percent penalty. No homework will be accepted after 11.59pm on the due date.

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

Make-up homework assignments, quizzes or examinations will only be given when there is a proven emergency, health or safety concern, or other unusual circumstance that are discussed with the instructor prior to submission/completion dates. If any issues hinder your performance in the class, please discuss with the instructor sooner than later. Any student that misses the quiz or mid-term exam due to a proven emergency or other circumstances may have their other assessments weighted up with instructor approval.

Important dates for assessment

Jan 24	Homework 1
Feb 7	Homework 2
Feb 21	Homework 3
Mar 7	Mid-term examination
Mar 14	Homework 4
Mar 24	Homework 5
Apr 4	Mid-term quiz
Apr 18	Homework 6
May 2	Homework 7
May 9	Final examination ⁴

The Department of Economics provides a free drop-in tutorial office which offers help on all core courses in the major, and occasionally on other undergraduate courses in the Department. Its website is:

<https://www.colorado.edu/economics/node/513/attachment>

⁴ The final exam is on Tuesday, May 9, 4.30 to 7pm. The spring 2023 exam schedule is available at https://www.colorado.edu/registrar/students/calendar/finals#classes_that_meet_tuesdays_amp_thursdays-837.

The Department also maintains a list of tutors who are available for private hire. Its website is:

<https://www.colorado.edu/economics/node/515/attachment>

Campus and department policies

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

See the campus and department policies at:

<https://www.colorado.edu/economics/current-courses>

See the required syllabus statements at:

<https://www.colorado.edu/academicaffairs/policies-customs-guidelines/required-syllabus-statements>

Lecture topics

The lecture topics for industrial organization will come from:

- i. Introduction to industrial organization
- ii. Monopoly pricing, valuing product quality
- iii. Product positioning
- iv. Price discrimination
- v. Two-part tariffs
- vi. Versioning, product bundling
- vii. Quantity competition
- viii. Price competition,
- ix. Product differentiation
- x. Collusion
- xi. Horizontal and vertical mergers