# ECON 4070-001 TOPICS IN MICROECONOMICS

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Class time and location: TTH 11am to 12.15pm, HLMS 267

## Course Description

Topics in Microeconomics uses analytical techniques to examine optimal decision making with certainty, uncertainty and imperfect information. Part I of the course reviews the fundamental economics of consumer choice with certainty. Part II examines risk and information in the context of utility maximization. Part III investigates inefficiencies from imperfect information, such as adverse selection and moral hazard.

The course will ask advanced questions about the choices of firms, consumers and policy makers, and answers those questions through observation, theoretical modeling, and experiments. Theoretical models will be used to obtain intuitive insight on economic behavior and to conduct theoretical "experiments." 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.

## Objectives

Develop the economic tools learned in *ECON 3070 Intermediate Microeconomic Theory* to understand how agents make optimal decisions when facing uncertainty and imperfect information.

Use economic tools to gain greater understanding of the economics of finance and insurance markets, where risk and imperfect information play a key role.

Become comfortable using algebra, calculus, diagrams and excel spreadsheets to develop models that explain microeconomic questions.

Understand 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*.  Completion of *ECON 4808 Introduction to Mathematical Economics*, or the equivalent, is desirable, but not necessary. Please note that the course meets a requirement for The Actuarial Studies Certificate Program and will be taught with some mathematical emphasis. Students should be familiar with microeconomic principles, algebra, calculus, optimization techniques and probability covered in prerequisite classes, and be comfortable expressing these concepts in short-answer questions in homework assignments and examinations.

You will also require a high-speed Internet connection, a printer and a scanner to complete this course. 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.

There will be virtual office hours this semester (at least at the beginning). I will be available for consultation on Tuesday and Thursday from 2.15 to 3.45pm. Please email your carefully written questions and I will answer them by email. If necessary, I can then organize a Zoom call or an in-person meeting with you.

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"). 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 for this class. Appropriate readings will be indicated during lectures and in my notes provided on Canvas. Your textbook from *ECON 3070 Intermediate Microeconomic Theory* will prove extremely useful for many topics. Alternatively, you may want to consider picking up a second-hand copy of *Microeconomics*, by David Besanko and Ronald Braeutigam, John Wiley & Sons and/or *Intermediate Microeconomics: A Modern Approach*, by Hal Varian, W.W. Norton and Company (5th or any other approximate edition).

**Class requirements**
Attend classes on Tuesday and Thursday. The critical thinking required for successful completion of this course may not come naturally for many students. In-class (and online) 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.

For safety and administration reasons, please try to sit in the same seat throughout the semester. I will take attendance 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.

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)[1], one mid-term quiz, one mid-term examination, and one final examination. The weights for these assessments are:

| Homework assignments | $(6 \times 10 \%)$ | 60 % |
|---|---|---|
| Mid-term quiz | $(1 \times 10 \%)$ | 10 % |
| Mid-term examination | $(1 \times 15 \%)$ | 15 % |
| Final examination | $(1 \times 10 \%)$ | 15 % |

Homework will consist of short-answer and problem-solving questions that require you to use diagrammatic, mathematical and written skills to <u>prove</u> 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 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

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

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 by 5pm on the due date. Submissions after 5pm 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.

<div align="center">Important dates for assessment</div>

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|---|---|
| Aug 30 | Homework 1 |
| Sep 13 | Homework 2 |
| Sep 27 | Homework 3 |
| Oct 11 | Mid-term examination |
| Oct 18 | Homework 4 |
| Nov 1 | Homework 5 |
| Nov 8 | Mid-term quiz |
| Nov 29 | Homework 6 |
| Dec 6 | Homework 7 |
| Dec 13 | Final examination[2] |

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

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.

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[2] The final exam is on Tuesday, December 13, 1.30 to 4pm. The spring 2022 exam schedule is available at https://www.colorado.edu/registrar/students/calendar/finals#classes_that_meet_tuesdays_amp_thursdays-833.

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