



Prof. Chrystie Burr  
chrystie.burr@colorado.edu  
Economics 11  
(303)492-0863  
D2L course website

**Economics 4697-001**  
Industrial Organization  
MWF, 1:00-1:50  
MUEN E417  
Office Hours: Wed 2:00-3:00

**Course Description:**

Industrial organization is the study of competition and monopoly power and how they affect efficiency and innovation that occur in markets. Using the basic tools of microeconomic theory and game theory, this course explores the relationships among firms in an industry or across industries by examining the nature of strategic interaction among firms. The central issue concern firms' choice of price, quantity, and quality in markets where the assumptions behind perfect competition do not hold.

Topics to be covered include: monopoly pricing, collusion and cartels, oligopoly behavior, product differentiation, price discrimination, firm entry and barriers to entry, mergers, network externalities and asymmetric information. We will also consider public policies that affect the structure of markets and the behavior of firms, particularly the antitrust laws that try to create a balance between the benefits of coordination and consolidation and the detriments of market power.

Class will be a mixture of theory and case studies with an emphasis on the theory.

**Prerequisite(s):**

Intermediate microeconomics (ECON 3070) is a prerequisite. You must also be comfortable enough with calculus so that you can differentiate fairly simple functions, such as polynomials and exponentials.

**Assessment:**

- In-class presentation (10%)
- Attendance and participation (10%)
- 4 problem sets (20%)
- 3 exams (60%)
  - midterm I (15%)
  - midterm II (15%)
  - Final exam (30%) May 4 Mon 1:30pm-4:00pm

- All exams will be held in the usual classroom. All exams are closed book, closed notes. Please bring a calculator. There will be no make-up exams. Exams will test your cumulative knowledge with emphasis on the latest material.
- Problem sets, each composed of 3-4 problems will be posted on the class web page and it's due at the beginning of the class a week after being posted. Collaboration on assignments is allowed and encouraged, but final solutions must be written independently. Each student should participate fully in solving each problem and understand the answer. This is the preparation for the exams and at the same time it is meant for you to identify which concepts from the lecture is not clear to you.
- In-class activities include short presentations of real-world examples of the following topics : *monopoly, duopoly/oligopoly, price discrimination, merger, collusion& cartel, limit pricing, predatory pricing, advertising, R&D, Patent*. A group of two students will give a 5 to 8 minutes of presentation which requires the use some means of visual aids (i.e. PowerPoint slides). You need to discuss why your example fits the topic and the background on the companies involved and the market they are in. A sign-up sheet will be posted on D2L. This will contribute to 10% of your final grade.
- Cheating and plagiarism will not be tolerated. They are immediate grounds for failing the class and will be reported to the dean. All incidents of academic misconduct will be reported to the Honor Code Council.

### **Textbook, Lecture Notes and References:**

1. Recommended textbook: *Industrial Organization: Contemporary Theory and Empirical Applications* by Pepall, Richards and Norman. 5<sup>th</sup> Edition (older editions are acceptable as well)
2. Lecture Notes: The outline of the lecture will be posted on the class website before class. I strongly encourage you to take detailed notes during class, as this will help you learn the material better. The outline notes are meant to complement your own notes, not as a substitute.
3. References: other relevant articles and references will be posted on the course D2L page.

### **Course Policies:**

- **General**
  - Attendance is critical to succeed in this class. In order to incentivize you to do so, regular attendance will be taken. Together with in-class participation and activities, this will contribute to 5% of the final grade. You will be dropped administratively if you do not attend any of the first three class meetings.
  - The deadline to drop the course with no record and at no cost is 11:59pm on Jan. 28. You can drop the course from MyCUInfo with a 'W' on the transcript between Jan. 29 to Mar. 20. After that, it requires signature from both your instructor and the Dean.
  - Students are responsible for all missed work, regardless of the reason for absence. It is also the absentee's responsibility to get all missing notes or materials.
- Missed Exams

- Make-up exams for the midterms will not be given. Midterm exam absences will only be excused for compelling circumstances (family emergencies or documented illness), in which case the other course material will be re-weighted. Students anticipating conflict with an exam due to religious observance or over-scheduling (3 or more exams on the same day) should bring these to my attention within the first 3 weeks of class.

- Special Accommodation:

- If you require special accommodation because of disability, please submit a letter from Disability Services in a timely manner (at least two weeks before the exams or other due dates). Disability Services determines accommodations based on documented disabilities. You may contact Disability Services at 303-492-8671 or b email at dsinfo@colorado.edu. If you have a temporary medical condition or injury, see Temporary Injuries for guidelines and discuss your needs with your professor.

## Topics to be covers:

- Intro & Review

- Unit 1: Introduction to Industrial Organization (Ch. 1)
- Unit 2: Review of Microeconomic tools (Ch. 2)
- Unit 3: Concepts of costs (Ch. 4 and notes on costs)
- Unit 4: Perfect competition (Ch. 2.1.1. and notes on perfect competition)
- Unit 5: Monopoly (Ch. 2.1.2. and notes on monopoly)
- Unit 6: Market structure and market power (Ch. 3)

- Imperfect (oligopolistic) Competition

- Unit 7: Introduction to game theory (Ch. 9 and notes on game theory)
- Unit 8: Normal form games (Ch. 9 and notes on game theory)
- Unit 9: Extensive form games (Ch. 9 and notes on game theory)
- Unit 10: Nash equilibrium and backward induction (Ch. 9 and notes on game theory)
- Unit 11: Cournot models (Ch. 9 and notes on Cournot and Bertrand models)
- Unit 12: Stackelberg models/Dynamic games (Ch. 11)
- Unit 13: Bertrand models (Ch. 10 and notes on Cournot and Bertrand models)

- Firm Practice

- Unit 14: Hotelling models (Ch. 7 and notes on Hotelling model)
- Unit 15: Price discrimination (Ch. 5 & 6 and notes on price discrimination)
- Unit 16: Collusion and Cartels (Ch. 14 & 15 and notes on cartels)
- Unit 17: Horizontal mergers (Ch. 16 and notes on mergers)

## ↑ Midterm 2

- Unit 18: Vertical mergers (Ch. 17)
- Unit 19: Networks (Ch. 24)

- Unit 20: Case study: Consolidation in the airlines industry
- Unit 21: Limit Price (Ch. 12)
- Unit 22: Predatory pricing (Ch. 13)
- Nonprice Competition
  - Unit 23: Advertising and Information (Ch.21 & 22)
  - Unit 24: Research and Development (Ch.22)
  - Unit 25: Patents (Ch. 23)



*“Education is the most powerful weapon which you can use to change the world.”*

— Nelson Mandela