

Industrial Organization (ECON 235)
Spring 2016
Monday and Wednesday 10:30 am – 11:50am
Instructor: SangMok Lee

This course is intended to introduce you to various industrial organizational structures and problems, including monopoly, oligopoly, nonlinear pricing, and price discrimination. These theories are used to model various industries, antitrust cases, and regulatory issues.

Course Logistics

Office hours: Tuesday 1:30-3:30pm (Until Feb 9)/ Tuesday 1-3pm (From Feb 16).
Office: McNeil 462
Email: sangmok-at-sas.upenn.edu

Teaching Assistant: Hanna Wang (hannaw@sas.upenn.edu)
TA Office Hours: Thursday 10am -12pm (314-5r McNeil)

We will use Canvas for announcements, handouts, notes, homework assignments etc.

Course Description

Prerequisites: Econ 101 (Intermediate Micro Theory), Math 104 and either Math 114 or Math 115 (Calculus Part I and II). Econ 103(Statistics for Economists) and Econ 212 (Game Theory) are recommended.

Textbooks: There is no textbook for this class. I will distribute standalone lecture notes, supplemented by papers and handouts. The following textbook is only recommended.

- *Industrial Organization: Contemporary Theory and Practice*, Thompson & South-Western, Fourth edition, by Pepall L., Richard D. and G. Norman.
- *Modern Industrial Organization*: Harper/Collins, by D. Carlton and J. Perloff.

Requirement and Grading Policy

1. Grades

		<u>Due/Exam dates</u>
Two midterm exams	2 x 30%	Mar 2, April 11 (class time)
One final exam	1 x 20%	May 2, 12 - 2pm
Term Paper	1 x 20%	Submit with the final exam

2. **Exercises** will be assigned from time to time during class. It is in your interest to complete the exercises, even though they will not be collected or graded. You can discuss your answers during office hours. Also, there will be TA sessions about a week before each exam.

3. **Examinations** will be *in-class* and *closed-book*. Collaboration on the examinations is prohibited. If you miss one mid-term exam, with a compelling and verifiable reason, the final exam and the term paper will make up 40 and 30 percent of your total grade. A request for a re-grade of an exam must be submitted to me in writing with the original bluebook, in which case I will reevaluate your complete homework set or exam.

4. **Term paper** will be to find and study real world examples of the phenomena we discuss in this class. Two progress reports will be required to submit along with the midterm exams. The paper should not exceed 15 pages with 1.5 spacing, including references, tables, figures, cover page (if you want to have any), whatsoever.

Students choose a topic and create a reading list. One option, which I recommend, is to write an empirical paper by collecting and analyzing a data set. Another option is to propose a new theoretical model and analyze equilibrium properties. We will discuss a few term-paper ideas during class. Some selective students with promising projects will have chances to present in the class and get extra credits.

Topics to be covered (Subject to change)

I. Market structure

1. Intro & Review. Technology and Costs. Perfect competition. Monopoly. Measuring market power.
2. Imperfect (oligopolistic) Competition. Introduction to game theory. Static games. Nash Equilibrium. Prisoner's dilemma. Cournot model. Bertrand model. Capacity constraints in price competition. Extensive form games. Subgame perfect equilibrium. Stackelberg model.
3. Cartels and collusion.

II. Firm practices

1. Incumbent advantage. Incumbent advantage. Limit pricing and credibility. Dixit model of capacity investment.

2. Product differentiation. Product differentiation resolves Bertrand paradox. Spatial Competition. Pricing, Location and Entry.
3. Price discrimination. Perfect, 2nd-degree, 3rd-degree price discrimination. Nonlinear pricing and bundling. Application: post-patent drug price anomaly.
4. Vertical integration and vertical restraints. Vertical Externalities (Double Marginalization, Downstream Moral Hazard). Vertical integration and vertical Restraints (Exclusive Territories, Tie-In, Resale Price Maintenance, etc.).

III. Information economics

1. Price dispersion and search. Price dispersion for homogeneous products. Diamond paradox. Equilibrium price dispersion with costly search. Applications: online books, gasoline markets.
2. Auctions. Games of incomplete information. Bayesian equilibrium. First-price auctions, second-price auctions.