

Ec105: Syllabus

EC 105. Firms, Competition, and Industrial Organization

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Administrative details

Contact Information

- Office: 301D Baxter; email: mshum@caltech.edu
- Admin: Letty Diaz (letty.diaz@caltech.edu)
- Website: www.hss.caltech.edu/mshum/ec105/ec105.html
Please check website regularly for announcements; class handouts, notes, &c.
- Leave extra time at end of classes for questions. Pls email for one-on-one appointments

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Suggested Textbooks and References

- Course is self-contained
- Standalone lecture notes, supplemented by papers and handouts
- Some suggested textbooks:
 - *The Theory of Industrial Organization*. MIT Press 1988, by Jean Tirole.
 - *Modern Industrial Organization*. Harper/Collins, by D. Carlton and J. Perloff.

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Course Policies

- Grades are based on the following weighting scheme:
 - Problem Sets (10%)
 - In-class Discussions (15%)
 - In class Exam (25%)
 - Tentative date: Feb 24, 2023
 - Closed-book
 - Final Presentation (50%). This can take the form of a 20-30 minute video.
 - Analyze a particular product, industry, or firm practice through the lens of the concepts covered in this class.
 - Please talk to me as soon as possible about possible research topic.
 - Tentative dates: March 3,10
- Late assignments will not be accepted. If you miss the exam, there is no makeup; your grade will shift proportionately to the other components.

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Overview of the Course

Topics to be covered

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.
- 3 **Cartels and collusion** Multi-period ("dynamic") games. Extensive form games. Subgame perfect equilibrium. Stackelberg model. Repeated games and tacit collusion.

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II. Firm practices

- 1 **Incumbent advantage.** Incumbent advantage. Limit pricing and credibility. Entry Deterrence.
- 2 **Product differentiation.** Spatial Competition. Hotelling model.
- 3 **Price discrimination.** Perfect, 2nd-degree, 3rd-degree price discrimination. Nonlinear pricing, bundling, secondary markets.
- 4 **Vertical restraints.** Vertical Externalities: Double Marginalization, Downstream Moral Hazard; Vertical Restraints; Exclusive Territories, Tie-In, Resale Price Maintenance, etc.

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- 2 **Adverse selection and moral hazard.** “Lemons” markets; insurance markets. Market remedies.

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IV. Additional topics (as time allows)

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