

Econ 6120L – Advanced Industrial Organization

Department of Economics – HKUST

Fall 2016

Instructor: Sandro Brusco

Organization: We will meet Tuesday 15:00-16:50 and Thursday 11:00 – 12:50, starting on Sep. 1.

Contact Information: I'm in office LSK 6070. E-mail: sbrusco@ust.hk. I have office hours on Tuesday, 13:00 – 15:00 pm, but you can talk to me whenever you find me in the office.

Grading: The grade will be based on 5 homeworks (25%), a midterm exam (25%) a term paper (40%) and a presentation of your paper (10%). The term paper will have to be on a topic of your choice related to the general material of the course. I will distribute a list of topics as well as guidelines on how the paper should be written.

Textbook: There are two main textbooks for the course:

Xavier Vives (1999) *Oligopoly Pricing: Old Ideas and New Tools*, MIT Press, Cambridge Mas

Vijay Krishna (2009) *Auction Theory*, 2nd edition, Academic Press, San Diego, California.

I will also use material from the following books:

- Jean Tirole (1988) *The Theory of Industrial Organization*, MIT Press, Cambridge Mass.
- Robert Gibbons (1992) *Game Theory for Applied Economists*, Princeton University Press, Princeton.
- Patrick Bolton and Mathias Dewatripont (2005) *Contract Theory*, MIT Press, Cambridge, Massachusetts.

and I will distribute notes and additional material during the class.

Topic 1. Introduction and Basic Tools. The mathematics of supermodularity and Tarski's theorem. Conditions for monotone best responses. Existence of equilibrium in oligopoly models.

Topic 2. Oligopoly: Static Models. Quantity and price competition, product differentiation, welfare and convergence to the competitive equilibrium.

Topic 3. Oligopoly: Entry, Exit and Dynamic Models. Applications of repeated games with perfect and imperfect information. Collusion and barriers to entry in repeated oligopolies. Dynamic models of entry and exit.

Topic 4. Introduction to Mechanism Design and Auction Theory. General introduction to the theory of mechanism design. Characterization of efficient mechanism and revenue-maximizing mechanisms in the quasi-linear case. Single-unit and multiple-unit auctions.

Topic 5. Imperfect Competition and Nonlinear Pricing. Application of mechanism design to the optimal pricing policy of a monopolist. Oligopoly models when firms can use nonlinear prices.

Topic 6. Search Models. The consequences of the presence of search cost and switching costs for competition and welfare.

Topic 7. Industry dynamics. Evolution of competitive and imperfectly competitive industries with heterogeneous firms and entry and exit.