Core Industrial Organisation – Syllabus
Instructor: Farasat Bokhari

Summary. This module provides understanding of various economic models and how to apply them to assess a range of issues related to firm behaviour and outcomes in imperfectly competitive markets. This module covers mid- to advanced-level topics in industrial organisation. Do firms have market power? How did they come about it? What are they doing to hold on to this power? What are the consequences on consumer and total welfare and for dynamic efficiency? What is the role of public policy in all of this? To answer these questions, we will learn to use tools from microeconomics and game theory in different contexts. Often the focus will be on modelling interactions among firms where they behave strategically in their choices of price, output, location, etc. We will derive equilibrium outcomes and study welfare effects. Module will cover traditional topics such as foundations of demand, monopoly and oligopoly models, price discrimination, vertical and horizontal product differentiation, entry deterrence, horizontal and vertical mergers. More specialized topics will be covered in the follow-on module. (20 class hours).

Learning Outcomes. Upon successful completion, students will be able to apply these models in various antitrust context as well as take on independent research projects.

Assessment. Course work will be given to students roughly midway through the module with a deadline 2 weeks after the end of the module. This take-home assignment will consist of combination of numeric and short discussion questions from any of the topics covered in the module. It will constitute 100% of the mark.

Prerequisites. No specialized prior training in IO and competition economics is required. The module will introduce participants to relevant economic concepts and models used in IO. However, students enrolling in this module are expected to have relevant undergraduate training in economics or related disciplines. Models will be often mathematical in nature and will require a basic grasp of mathematics at A-levels level.

Textbooks and readings. Lectures are drawn from several textbooks and copies of slides will be made available during the program and can serve as the main reference material. However, Belleflamme and Peitz (listed below) is the primary text, and you may want to purchase a copy of this book. Other books used for some topics are also listed below and are available in the library.

- Belleflamme, P. and Peitz, M. (2010). Industrial Organization: Markets and Strategies. Cambridge University Press, Cambridge, UK
- Tirole, J. (1988). The Theory of Industrial Organization. MIT Press, Cambridge, MA.
- Motta, M. (2004). Competition Policy: Theory and Practice. Cambridge University Press
- Shy, Oz. Industrial Organization: Theory and Applications. The MIT Press.
- Church, J. and Ware, R. (2000). Industrial Organization: A Strategic Approach. McGraw-Hill, Boston, MA, international edition

- Pepall, L. and Richards, D. and Norman, G. (2014) Industrial Organization: Contemporary Theory and Empirical Applications. John Wiley and Sons. Hoboken, NJ.

Class Format. There will be a total of six classes delivered over six weeks. Each lecture will be delivered within a 3-hour slot and will be about 150 minutes long with breaks in between and some additional time in the end for discussions and Q&A. Classes are online. Note that sometimes a topic for a given week may spill over into the next week as well.

Topics. The following topics will be covered in the module (tentative list).

1. Monopoly and Oligopoly. We will highlight the differences between perfect competition and monopoly as the extreme forms of competition. Focus will on pricing rules, consumer welfare, and profits. Next, we will focus on the oligopolistic competition for homogenous goods. We will introduce models where firms compete in prices (Bertrand), quantities (Cournot), as well as Leader-follower models in quantity setting (Stackelberg). Basic concepts from game theory will be introduced [Note: the last topic may spill over into the next week].

2. Price discrimination. This topic will introduce the three main forms of price discrimination by a monopolist: first, second, and third-degree price discrimination. We will focus on consumer surplus, Ramsey pricing, and participation and incentive compatibility constraints. For the latter we will introduce product versioning. Time willing, we will also discuss bundling.

3. Product Differentiation. We will present and analyse the two general types of product differentiation: horizontal and vertical product differentiation. In the first case we will first study the representative consumer model where firms compete either in prices or in quantities and focus on what the market equilibrium looks like when firm's actions are strategic complements or substitutes. Next we will look at heterogeneous consumer models where firms choose how much to differentiate and how to price their product (aka the Hotelling model). This model will be used for both horizontal and vertical differentiation.

4. Entry and Entry Deterrence. The first part of the lecture will focus on how many firms enter under free entry, and if there is too much of too little entry from the social planner's point of view under different situations. Here will consider entry under different models and setups. Later part of the lecture will focus on the direct actions that incumbents can take to either deter or accommodate entry.

5. Collusion and Cartels. We will analyse the nature and determinants of collusion among oligopolistic firms. We will develop models that help identify various key factors that facilitate or hinder collusion. We will focus on what punishment and reward strategies maximize individual incentives to stick to an existing collusive agreement, and how do exogenous factors such as demand fluctuations, or the observability of price or quantity choices, affect the possibility of collusion.

6. Mergers. We will discuss the motives for merger and conditions under which a horizontal merger is profitable as well as the merger paradox. We will discuss 2-to-1 and 3-to-2 horizontal merges in the context of quantity (Cournot) competition, as well mergers when products are differentiated, and firms compete in prices. Our focus will be on unilateral effects (rather than coordinated effects). The second main topic be screening tools for merger review including merger simulations. We will also consider vertical mergers. In the context of upstream/downstream firms producing complementary services or products, our focus will be on externalities that can be internalized via a merger (e.g. double marginalization) as well as on foreclosure concerns.