



**Birla Institute of Technology & Science, Pilani**  
Hyderabad Campus

**SECOND SEMESTER 2023-24**

**COURSE HANDOUT**

**Date: 09-01-2024**

In addition to Part-I (General Handout for all courses appended to the timetable), this portion gives further specific details regarding the course.

**Course No.** : ECON F314  
**Course Title** : Industrial Economics  
**Instructor-in-charge** : Dushyant Kumar

**1. Scope and Objective of the Course:**

Industrial Economics studies the application of economic theory to the management of the modern firms. We will be studying the pricing techniques and strategies of firms in different setups. Primarily we are going to cover the functioning of imperfectly competitive markets, optimal behavior of firms in these markets, and its (social) welfare implications. It entails a wide-ranging economic analysis of the firm, its organizational structure, and market/industry outcomes. It primarily uses theoretic concepts from microeconomics and game theory.

Industrial Economics is a one-semester course which applies microeconomics, econometric and game theoretic techniques to the study of firms as organizations, market structures, strategic interaction between firms (and regulators), market efficiency and industrial policy. Our focus is also on the impact that these firms' behavior and industry outcomes, have on social welfare. Often this type of analytical and abstract modeling captures non-trivial and seemingly counter-intuitive welfare implications.

**Objective:**

1. Give a simple yet rigorous introduction of economic theories of firms' behavior and industry structure.
2. Students should be able to use basic microeconomics and game theoretic tools to model firms as well as industry behavior under different conditions on production technology, competitive structure, and institutional factors.
3. The students should be able to understand and appreciate the (social) welfare implications of different competition rules, institutional factors, government policies, etc.
4. Enhance students' skills and abilities to use theoretical and empirical tools to formulate and solve economic (in general, analytical) problems.

**2. Text Book:**

**(T1)** J. Church and R. Ware, "Industrial Organization: A Strategic Approach", First edition, McGraw-Hill, 2000.



A pdf file version of this book is available free of charge on the Internet at the following address  
[https://edisciplinas.usp.br/pluginfile.php/544042/mod\\_resource/content/1/ChurchWare.pdf](https://edisciplinas.usp.br/pluginfile.php/544042/mod_resource/content/1/ChurchWare.pdf). You must respect the terms and conditions of usage.

### 3. Reference Books:

**(R1)** Waldman, Don E. and Elizabeth J. Jensen (2005): *Industrial Organization: Theory and Practice*, Second Edition, Pearson Education.

**(R2)** Oz Shy (1996): *Industrial Organization - Theory and Applications*, MIT Press.

**(R3)** Stephen Martin (2010), *Industrial Organization in Context*, Oxford University Press, 2010.

**(R4)** Paul Belleflamme and Martin Peitz (2021), *The Economics of Platform: Concepts and Strategy*, Cambridge University Press.

**(R5)** Rakesh V. Vohra and Lakshman Krishnamurthi (2013) *Principles of Pricing: An Analytical Approach*, Cambridge University Press.

### 4. Course Plan:

Topics	Lecture No.	Learning Objectives	Topics to be Covered	Chapter in the Text Book
<b>1.</b>	1	To introduce students to the basic market structures and firm behavior	Introduction and theoretical framework of industrial analysis	T1. Chapter 1 R2. Chapter 1
	2-6		Perfect competition, monopolistic competition and monopoly  The firm and its costs  Welfare economics of market power	T1. Chapters 2 & 3 R2. Chapters 4,5,7
<b>2.</b>	7-9	To introduce students to different monopoly setups and its pricing and welfare implications	Market power and dominant firms	T1. Chapter 4 R1. Chapter 5 R2. Chapter 5
	10-12		Price discrimination	T1. Chapter 5 R2. Chapter 3
	13-15		Identifying and Measuring Market Power	T1. Chapter 12
<b>3.</b>	15-19	To introduce students to the basic game theoretic concepts, and its usage and implications on firms behavior and market outcomes	Introduction to basic Game Theoretic Concepts	T1. Chapter 7 & 9 R2. Chapter 2 Notes
	20-24		Various Models of Oligopoly	T1. Chapter 8 & 10 R2. Chapter 6 Notes



	25-27		Entry deterrence	T1. Chapters 13 & 14 R2. Chapter 8
4.	28-31	To introduce students to non-pricing instruments of a firm	Advertising and Oligopoly	T1. Chapter 11 R2 chapter 11
	32-35		Research and Development	T1. Chapter 18 R2. Chapter 9
5.	36-37	To introduce students to the economics of compatibility and standards: Basic economics of network goods	The network externalities approach,  The supporting services approach,  The components approach	R2.Chapter 10 R4.Chapter 04 Notes
	38-39		Pricing of network goods, compatibility decisions	
	40-41			

## 5. Learning Outcomes:

### Topic 1: Basic firm behavior, market structures and welfare implications

1. The students should be able to analyze basic firms behavior using economic theory.
2. The students should be able to do comparative analysis of welfare implications of monopoly and perfect competition setups.

### Topic 2: Monopoly (pricing) practices and welfare implications

1. In standard monopoly frameworks, the students should be able to calculate optimal pricing.
2. The students should be able to identify and index market powers of firms in different industries.

### Topic 3: Applications of basic game theoretic tools in oligopolistic market setups

1. The students should be able to apply basic game theoretic solution concepts (particularly NE and SPNE) to different games.
2. The students should be able to apply basic game theoretic equilibrium concepts to strategic interactions between two or more firms.

### Topic 4: Non-pricing instruments of a firm

1. The students should be able to analytically model advertisement by firms.
2. The students should be able to analytically model research and development activities by firms.

### Topic 5: Economics of compatibility and standards

The students will learn how firm's optimal behavior changes if it's products and services have network effects. The students should be able to derive the effects of such network effects on market power.

## 6. Evaluation scheme:



Component	Duration	Weightage (%)	Date and Time	Remarks
Mid-sem	90 mts	30	14/03 - 2.00 - 3.30PM	OB
Quizzes, class participation	-	15		CB
Assignments, problem sets		10		OB
Comprehensive Examination	3 hrs	45	15/05 FN	CB

**7. Chamber Consolation Hour:** To be announced in the class

**8. Notices:** Notices, if any, would be put on CMS.

**9. Make-up Policy:** Make-up will be granted only on genuine grounds and if prior permission is taken. No application will be accepted in the Exam Hall. Make-up will be given only on Doctor's/Warden's recommendation and with prior (at least 01 day before the test/exam) permission of the Instructor-in-Charge/Instructor. Make-up application via sms/messages is not acceptable.

**10. Academic Honesty and Integrity Policy:** Academic honesty and integrity are to be maintained by all the students throughout the semester and no type of academic dishonesty is acceptable.

**Instructor-in-Charge  
BITS F314**

