# uc3m Universidad Carlos III de Madrid

# Organización Industrial I

Curso Académico: (2022 / 2023) Fecha de revisión: 11-04-2022

Departamento asignado a la asignatura: Departamento de Economía Coordinador/a: CARDOSO-MARTA PINTO-MACHADO, MATILDE

Tipo: Optativa Créditos ECTS: 6.0

Curso: 1 Cuatrimestre: 1

### REQUISITOS (ASIGNATURAS O MATERIAS CUYO CONOCIMIENTO SE PRESUPONE)

Students taking the class are expected to have solid knowledge of Calculus; previous experience in Game Theory and Microeconomics especially is very useful, as the class builds on and departs from the basic models of Perfect Competition and Monopoly, the knowledge of which is the basis of comparison of the models of Oligopoly which are our main focus.

#### **OBJETIVOS**

This class aims at teaching students how markets work after we depart from Perfect Competition where prices are set in the market and efficiency is attained. Market power and strategic considerations of firms will then determine prices and quantities; the welfare effects of market power should then be understood and analyzed.

Through the class, students will be familiarized with the way a monopoly works depending on potential pricing strategies (uniform price and price discrimination), production strategies (single good and many goods), as well as other marketing strategies (bundling and tying).

We will also study the basic models of Oligopoly with firms competing in quantity (Cournot, Stackelberg) and price (Bertrand, price competition with capacity constraints). For this part of the course we will be using game theoretic concepts to define equilibrium prices and quantities, due to the strategic considerations of firms in an Oligopoly. Departing from one shot game environments, we will also study optimal firm strategies in a repeated game in order to understand collusion.

Finally, we will consider markets with horizontally differentiated goods (Hotelling Model); now firms will be faced with an extra strategic decision, on the optimal differentiation level. Prices/Quantities will then depend on the level of firms' differentiation.

After the end of the course, the students are expected to know how to set up a firm's maximization problem depending on the type of market they are in and derive the first order conditions of optimality, thus computing equilibrium prices and quantities. Both graphical, algebraic and analytical skills are expected from the students, who should also be able to provide intuition about their mathematical results.

## DESCRIPCIÓN DE CONTENIDOS: PROGRAMA

1. Introducción y Medidas de Concentración

[Tirole 5.5; Cabral 2.3; Clarke pp 2.1.1, 2.1.2, Shy 8.1]

- 2. Monopolio y Discriminación de Precios
- 2.1 Monopolio

2.2. Discriminación de Precios

[Tirole 3.1, 3.2, 3.3.]

2.3. Otras estrategias de Mercado

[Shy ch. 14]

2.4. Monopolio multiproductor

[Tirole 1.1.2]

3. Oligopolio

3.1 Comportamiento Estrategico

[Tirole, Introduction until part II]

3.2 El modelo de Bertrand

[Cabral, Luis 3.3, Tirole 5.1-5.2]

3.3 Competición de Precios con restricción de capacidad

[Cabral, Luis 3.4, Tirole 5.3]

3.4 El modelo de Cournot

[Cabral, Luis 3.2., Tirole 5.4]

3.5 El modelo de Stackelberg

[Cabral, 3.5, Segura cap. 5, Shy 6.2, Church y Ware 13.2] 3.6 Entrada, Modelo de Spence-Dixit Model (Si hay tiempo) [Tirole 8.1-8.2.2.1 (except 8.1.3), Church y Ware 13.3] 3.7 Colusión Tácita: Juegos repetidos

[Tirole 6.3]

- Diferenciación de Producto 4.
- 4.1. **Definiciones**

[Cabral, Luis 8.4]

4.2. El Hotelling Model

[Tirole 7.1.1]

- 5. Notas Básicas para el trabajo empírico
- 6. El efecto de la estructura de mercado sobre los precios una análisis del punto de vista empírico [Davis and Garcés chapter 5, pp 230-255]

### ACTIVIDADES FORMATIVAS, METODOLOGÍA A UTILIZAR Y RÉGIMEN DE TUTORÍAS

Course Teaching will involve:

- A) Theory classes: the basic models used will be analyzed-assumptions, methodology and results. Small exercises will be solved as much as time allows.
- B) Exercise classes: students will be informed in the theory classes about the exercises to be solved here.

Students are expected to also work at home, consulting if they wish the bibliography. In the last theory lecture students will need to present a published paper of their choice, relevant to the class material; this aims at students learning how to focus on the most important features of papers and be able to clearly connect the assumptions with the results through the methodology used.

#### SISTEMA DE EVALUACIÓN

Final Exam: 60% of Final Grade

Midterm Exam+Presentation: 40% of Final Grade

Peso porcentual del Examen Final: 60 Peso porcentual del resto de la evaluación: 40

# **BIBLIOGRAFÍA BÁSICA**

- Jean Tirole La Teoría de la Organización Industrial, Editorial Ariel, 1990
- Luis Cabral Economia Industrial, McGraw-Hill, 1997
- Roger Clarke Economia Industrial, Celeste Editores.