



UNIVERSITÀ  
DEGLI STUDI DI MILANO-BICOCCA

## SYLLABUS DEL CORSO

### Microeconomia M

2425-1-F8204B005

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#### Learning objectives

This course (42 hours of conventional teaching and 6 credits) aims to discuss a few advanced topics in microeconomics: it assumes a good knowledge of basic microeconomic principles. In particular, it focuses on the formulations of the programs of profit and utility maximization, on their dual presentations and the main behavioural implications. It aims to make the students familiar with the main properties of the demand and supply functions which derive from those programs, and with their implications in terms of welfare and efficiency measures.

#### Contents

This course aims to discuss some fundamental results in the theory of duality in production and consumption theory (competitive markets).

#### Detailed program

The course first part aims to provide a treatment of duality theory and its applications in modern microeconomics. Problems of consumer and producer optimization will be presented in both primal and dual versions and functional relations among relevant variables will be discussed. In particular, we will discuss the problem of profit maximization (cost minimization) and consumer choice, and the associated demand and supply functions.

We will discuss the following analytical tools:

- direct and indirect production functions;
- direct and indirect utility functions;
- cost/expenditure functions;
- profit functions (general and restricted);

quasi-linear preferences and consumer surplus measures;  
input and consumption direct and inverse demand functions;  
Slutsky decompositions of price effects;  
Roy and Hotelling-Wold identities;  
Hotelling and Shephard lemmas.

## **Prerequisites**

Basic calculus (analysis and linear algebra) and microeconomics.

## **Teaching methods**

Conventional lectures and classes of exercises (if needed, the latter will be provided in remote).

## **Assessment methods**

Written final test with 2 exercises and 1 open question: each of the three part gives up to 10 point for the final mark.  
No partial/intermediate exams.

## **Textbooks and Reading Materials**

Hal R. Varian, *Microeconomic Theory*, third edition, Norton, 1992: Chapter 1 (all but paragraph 1.3), Chapter 2 (all but paragraphs 2.5 and 2.6), Chapter 3 (all), Chapter 4 (all but paragraph 4.5), Chapter 5 (all), Chapter 6 (pp. 87-89, paragraphs 6.4 and 6.5), Chapter 7 (all), Chapter 8 (paragraphs 8.1, 8.2, 8.3, 8.4, and 8.6), Chapter 9 (paragraphs 9.2 and 9.5), Chapter 10 (paragraphs 10.1, 10.2 and 10.3).

- additional stuff uploaded on the course website on the comparative statics of costs, input inverse demand, the indirect production function, duality in consumption and quasilinearity of preferences and the marshallian consumer surplus.

Just another textbook:

Richard Cornes, *Duality and Modern Economics*, Cambridge University Press, 1992.

## **Semester**

II semester.

## **Teaching language**

Italian.

## **Sustainable Development Goals**

RESPONSIBLE CONSUMPTION AND PRODUCTION

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