UNIVERSITÀ
DEGLI STUDI DI MILANO-BICOCCA

# COURSE SYLLABUS

## Basic Programming - 1

**2627-1-F7704M004-F7704M004-1-T1**

### Learning objectives

Knowledge and understanding:
The course aims to provide the student with the skills to use VBA for Excel to solve medium-complexity problems in his/her area of ??specialization and to translate them into automated procedures.

Applied knowledge and understanding:
At the end of the course, the student will be able to design simple macros in VBA for Excel in order to process data to solve specific problems.

Making judgments:
The student will learn to independently choose the most suitable tools and techniques among those learned to solve practical problems of moderate complexity related to data manipulation in Excel.

Communication skills:
The student will develop effective communication skills in the context of programming. He will be able to express technical concepts related to code and algorithms in a clear and understandable way, both orally and in writing.

Learning ability:
The student will develop the fundamental skills for autonomous and continuous learning in the field of macro design in VBA for Excel. He will be able to quickly acquire new knowledge and skills regarding data analysis in Excel, to use external resources to deepen programming topics, and to independently solve complex problems through the application of the principles learned.

### Contents

VBA programming and applications to data manipulation

## Detailed program

- Excel review
- Visual Basic for Applications (VBA)
    - language fundamentals
    - GUI and use of online documentation
    - operators, data types, variables and expressions
    - flow control
    - function and parameter passing
    - user defined functions
    - structured data types
    - Text file manipulation

## Prerequisites

Mathematical-logical knowledge as acquired during high-school and basic concepts on algorithms.

## Teaching methods

Frontal lessons. Lessons take place in computer science lab to allow students to immediately apply the concepts explained.

## Assessment methods

Learning assessment includes a written exam. The written exam will take place in the teaching laboratories to evaluate the student's skills in using Excel and their competence in solving simple problems.

## Textbooks and Reading Materials

- UgoMoscato, Mauro Minella. Visual Basic for Application con Microsoft Excel. McGraw-Hill Education
- S. C. Chapra, Introduction to VBA for Excel, 2nd ed., Prentice Hall

## Semester

First semester

## Teaching language

Italian

## Sustainable Development Goals

QUALITY EDUCATION