UNIVERSITÀ
DEGLI STUDI DI MILANO-BICOCCA

COURSE SYLLABUS

Mathematics for Business & Economic Studies

2223-3-E3301M217

Learning objectives

The aim of this course is to study the fundamentals of applied mathematics in the framework of economic analysis. The course enables students to use quantitative tools in order to solve real problems in the economic context.

Contents

The course focuses on the elaboration of economic information as well as on the analysis of some mathematical tools useful to formalize decision-making and management problems.

Detailed program

Investment choices: properties and evaluation of financial projects using Internal rate of return (IRR) and Net Present Value (NPV). Sufficient conditions to find the internal rates; applications (excel). Leasing: description, leasing contract, interest rate, leases in comparison, application (excel).
Other implicit internal rates: TAN, TAEG.
Linear and Integer programming: theory and general solution methods, algorithms of solution.
Network theory: basic definitions, properties. Trees, Minimum spanning tree. Project management.

Prerequisites

Basics of mathematics (calculus and financial mathematics).

Teaching methods

Lectures in the classroom.

Assessment methods

The exam is in the written form and consists of:
A part made of closed questions for extensive testing of the exam program.
A part made of open questions on all topics covered in the course. The questions will be theoretical, for extensive testing of the exam program.
A part of the exam consists of solving exercises and a decision problem solved using excel, for the purpose of establishing the disciplinary problem solving skills.

Textbooks and Reading Materials

S. Stefani, A. Torriero, G. Zambruno, Elementi di matematica finanziaria e cenni di programmazione lineare, Giappichelli Editore, ed. 2017

L. Bellenzier, R. Grassi, S. Stefani, A. Torriero, Metodi quantitativi per il management, Esculapio Editore, Bologna, 2012

Semester

First Term

Teaching language

Italian

Sustainable Development Goals

QUALITY EDUCATION