UNIVERSITÀ
DEGLI STUDI DI MILANO-BICOCCA

COURSE SYLLABUS

Financial Mathematics - 1

2425-2-E3303M015-E3303M016M-T1

Learning objectives

Aim of this course is to provide mathematical tools useful to applications in economics and finance. Students should be able to define and then solve the proposed mathematical models.

Contents

Linear algebra. Financial Mathematics.

Detailed program

Linear algebra: linear spaces; linear dependence and independence; matrices; determinant; inverse matrix; rank; linear systems and their resolution; eigenvalues and eigenvectors.

Financial Mathematics: Principles of financial calculus. Simple and compound interest, trade discount. Present and future values. Annuities and perpetuities. Amortization plans. Financial flows analysis: DCF. Investment appraisal. Bond pricing. Yields. Duration. Term structure of interest rates. Forward rates.

Prerequisites

Calculus

Teaching methods

Teaching consists of lectures, exercises and tutoring in preparation for the final assessment.
Some of the lectures will be provided remotely (at most 30% of the hours). The teacher will communicate in advance which lessons will be provided remotely

Assessment methods

Written exam on all topics of the course, including exercises and theoretical questions. Each question equally contributes to the final grade.
The written exam evaluates the knowledge of the mathematical formal language, the proficency and competencies gained during the course. There are no intermediate tests.

Textbooks and Reading Materials

S. Stefani, A. Torriero, G. Zambruno, Elementi di matematica finanziaria e cenni di programmazione lineare, Giappichelli Editore, V
Scaglianti, L., Torriero, A., Scovenna, M. "Manuale di Matematica- Metodi e applicazioni" Edizioni CEDAM

Semester

First Term

Teaching language

Italian

Sustainable Development Goals

QUALITY EDUCATION