UNIVERSITÀ
DEGLI STUDI DI MILANO-BICOCCA

SYLLABUS DEL CORSO

Matematica per la Finanza - 2

2021-2-E1803M051-T2

Learning area

Learning objectives

The aim of the course is to give the main tools for the basics of mathematical finance.

Contents

Sequences and series, integrals, linear algebra and programming, choice under uncertainty, basic notions on financial mathematics and on derivatives

Detailed program

1) Sequences and series: definitions and analysis of the character of series by means of the main criteria.

2) Integrals: definitions, main results and computation.

3) Linear algebra: matrices, vectors and linear systems.

4) Linear programming.

5) Financial mathematics.

6) Bonds and immunization.

7)

Prerequisites

Functions in one and more variables, basic notions of Probability and Statistics.

Teaching methods

Lectures on line with periodic meetings in streaming and with the support of slides on the second part of the course.

Assessment methods

The final exam is composed by a written part (divided in open questions and exercises) and an optional oral part. The final mark takes into account the scores of the parte above.

Textbooks and Reading Materials

- “Successioni, serie e integrali”, Manuale modulare di Metodi Matematici, vol. 5, a cura di Giovanna Carcano, edizioni Giappichelli Torino

- “Algebra lineare”, Manuale modulare di Metodi Matematici, vol. 4, a cura di Maria Ida Bertocchi, edizioni Giappichelli Torino

- “Elementi di Matematica Finanziaria e cenni di Programmazione Lineare”, S. Stefani, A. Torriero e G. Zambruno, edizioni Giappichelli Torino

- “Matematica Finanziaria classica e moderna”, F. Cacciafesta, edizioni Giappichelli Torino

- "Opzioni e futures", J. Hull