



UNIVERSITÀ  
DEGLI STUDI DI MILANO-BICOCCA

## SYLLABUS DEL CORSO

### Metodi Matematici

2021-2-E1802M118

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#### Learning area

#### Learning objectives

The aim of the course is to give the main tools for the basics of series, integrals and linear algebra. Furthermore, it ..

#### Contents

**Matematica Generale II:** Sequences and series, integrals and linear algebra.

**Matematica Finanziaria:** The course presents the basic principles of traditional financial mathematics (also known as ..)

#### Detailed program

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2) Integrals: definitions, main results and computation.

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

### **Matematica Finanziaria:**

Capitalization Laws Financial transactions. Amounts, interest, discount. Capitalization laws and \_\_\_\_\_

Annuities and their classification. Value of an annuity in an instant  $t$ . Calculation of present and \_\_\_\_\_

Accrued capital. Repayment of a loan. Depreciation.

Financial operations in general: investments / financing, narrowly, side, general, pure. Selection \_\_\_\_\_

Bonds and their valuation: characteristics of a bond and profitability indicators. Term structure, \_\_\_\_\_

### **Prerequisites**

Prerequisites are considered indispensable knowledge and mastery of the typical topics of the \_\_\_\_\_

\_\_\_\_\_

Student who do not intend to subscribe to the HONOR CODE can write to their teacher to agree \_\_\_\_\_

### **Teaching methods**

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\_\_\_\_\_

### **Matematica Finanziaria:**

In the Covid-19 emergency period lessons will take place remotely in asynchronous \_\_\_\_\_

The study of each topic will end with a tutorial programmed remotely on Webex and advertised \_\_\_\_\_

### **Assessment methods**

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### **Matematica Finanziaria:**

In the emergency period Covid-19 exams will be only remotely managed. They will be carried \_\_\_\_\_

The exams, after the health emergency, will be delivered in ways that will be, subsequently, \_\_\_\_\_

Emergency Covid-19

- **Two Partial Tests** (each test will consist of 16 multiple choice questions) to be performed \_\_\_\_\_

There are no other arrangements for partial tests.

Students who want to "improve" the grade obtained with the written tests, can ask to take an oral \_\_\_\_\_

- **Single test online** (the test will consist of 16 multiple choice questions) synchronously through \_\_\_\_\_

This final part of the exam is to be supported together with the conduct of multiple choice \_

Also in this case, the oral exam will take place synchronously through scheduled appointments \_\_\_\_\_

### **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

- S. Stefani, A. Torriero, G.M. Zambruno: "Elementi di Matematica finanziaria e cenni di programmazione lineare" Giappichelli, 5 a ed., 2017

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