UNIVERSITÀ
DEGLI STUDI DI MILANO-BICOCCA

SYLLABUS DEL CORSO

Matematica

2223-2-E4001N078

Aims

Provide the student with the basic principles of mathematical calculus and discrete probability, so that the quantitative behaviour of social and economic phenomena can be studied and interpreted. Develop logical and analytical skills to solve problems.

Contents

Combinatorics. Discrete probability. Matrices. Introduction to graph theory.

Detailed program

Sets: subsets, operations and relations between sets.
Combinatorics: sequences with and without repetitions. Permutations. Combinations. Finite probability space. Repeated and independent tests. Dependent and independent events. Conditional probability. Conditional probability and partitions. Bayes theorem.

Elementary functions: polynomials, exponentials, logarithms, their properites and graphs.

Operations with matrices.
Introduction to graph theory: definitions, properties and applications. Simple, complete, bipartite graphs. Path. Map coloring. Eulerian graphs. Hanshaking Lemma.

Prerequisites

Elementary algebra. Exponential functions and logarithms. Inequalities.

Teaching form

Frontal theoretical lessons in the classroom in which we provide knowledge of definitions, theorems and relevant examples and classroom exercises in which we try to provide the necessary skills and abilities to use these notions in the resolution of exercises.

Textbook and teaching resource

information available on the e-learning platform

Semester

First semester

Assessment method

Written exam with the possibility of oral integration.

The written exam consists of questions with closed and open answers.

The written exam can be replaced by partial tests carried out during the course.

Office hours

By appointment

Sustainable Development Goals

QUALITY EDUCATION