



UNIVERSITÀ
DEGLI STUDI DI MILANO-BICOCCA

SYLLABUS DEL CORSO

Analisi Matematica

2122-1-E3101Q100

Aims

Contents

Real numbers. Sequences and infinite series. Differential and integral calculus in one variable.

Detailed program

Real numbers

Elementary functions

Generalities on functions

Real variable functions

Sequences

Limits of real sequences

Induction principle

Limits and continuity

Limits of functions

Continuous functions

Global properties of continuous functions

Differential calculus

Derivatives of a function

Properties of differentiable functions

Convex and concave functions

Taylor's formula

Graphs of functions

Integral calculus

Riemann integrable functions

Fundamental theorem of calculus and antiderivatives

Integration methods

Series

Series, convergence, absolute convergence

Series with positive terms

Series with terms of non constant signs

Prerequisites

Elementary algebra: symbolic algebra, equations and inequations of first and second degree; elementary trigonometry; logarithm and exponential.

Teaching form

Lectures on the blackboard. The course is taught in Italian.

Textbook and teaching resource

A. Albanese, A. Leaci, D. Pallara, [Appunti del corso di Analisi Matematica I](#)

Semester

First semester

Assessment method

Examination type: written examination (oral examination optional)

Written part: maximum mark 30/30. The written part is divided in two:

first part: 8 multiple choice questions (simple theoretical and practical exercises). Each answer: 1.5 points, if correct, -0.5 points, if wrong, 0 points, if not given.

second part: exercises, together with a theoretical question (the student is asked to provide, for instance, definitions, statements of theorems, examples).

If the total score of the first part is less than 7, the second part is not corrected and the student must repeat the written part of the exam.

The final mark of the written part is obtained by adding the mark of the first and the second part.

If the mark of the written part is more than, or equal to 18, the student can conclude the exam with the mark of the written part, without undergoing an oral exam, or, else, undergo an oral examination.

There will be a written test '[in itinere](#)' restricted to first year students.

Office hours

By appointment.
