



UNIVERSITÀ  
DEGLI STUDI DI MILANO-BICOCCA

## COURSE SYLLABUS

### Altre attività - Livellamento di Analisi Matematica (Clamses)

2324-1-F8204B028-LA

---

#### Learning objectives

The objective of the course is to provide the students with the main notions of mathematical analysis.

#### Contents

The course will cover the following topics (in the following order): multivariate differentiable functions and partial derivatives, non-constrained extrema of multivariate functions, Jacobian matrix and composite function rule for differentiation, constrained extrema of multivariate functions, double integrals.

#### Detailed program

##### Class 1

- Partial derivatives e differentiation of multivariate functions
- Higher-order derivatives
- Examples and exercises

##### Class 2 and 3

- Non-constrained extrema of multivariate functions
- Differential calculus for vector-valued functions
- Constrained extrema of 2-variate functions
- Examples and exercises

#### **Class 4**

- Integrals of 2-variate functions
- Examples and exercises

#### **Class 5**

- Exercises

#### **Prerequisites**

Familiarity with main concepts of Mathematical Analysis 1.

#### **Teaching methods**

Lecture

#### **Assessment methods**

There will be a written exam where you will be required to solve some exercises.

Attending and passing this course guarantees the acquisition of 2 credits related to ["Other educational activities" for the CLAMSES master's degree: Altre attività formative- 2 CFU - Scienze Statistiche ed Economiche \(unimib.it\)](#).

You can only take this exam once and the exam will be in October 2023.

#### **Textbooks and Reading Materials**

- The notes written during the class will be uploaded at the end of the class
- Bramanti, Pagani, Salsa. Analisi matematica 2. Second edition

#### **Semester**

The course will start before the beginning of the first semester and, in particular, the classes will be held from 18/09/2023 to 22/09/2023.

#### **Teaching language**

Italian

## **Sustainable Development Goals**

QUALITY EDUCATION

---