UNIVERSITÀ
DEGLI STUDI DI MILANO-BICOCCA

COURSE SYLLABUS

Calculus II

2324-2-E4101B009

Aims

The aim of the course is to introduce the study of functions in N variables, in particular differential and integral calculus.

Contents

Differential calculus in R^N

Integral calculus in R^N

Detailed program

Functions in N variables

Limits and continuity of functions

Partial derivatives

Differentiation rules for partial derivatives

Tangent plans

Gradient and differentiability

Maximums and minimums

Constrained maxima and minima, Lagrange multipliers

Double integrals

Double integrals in polar coordinates

Triple and higher integrals

Change of variable in integration

Prerequisites

Passing the exams of Mathematical Analysis I and Linear Algebra.

Teaching form

Lectures with exercises in class.

Textbook and teaching resource

M. Bramanti, C. Pagani, S. Salsa, Analisi matematica 2. Zanichelli, 2009.

M. Bramanti, Esercitazioni di Analisi Matematica 2. Esculapio, 2012.

M. Boella, Analisi Matematica 2: Esercizi, Seconda edizione. Pearson, 2014.

S. Salsa, A. Squellati, Esercizi di Analisi matematica 2. Zanichelli, 2011.

Semester

First semester, first cycle (from October to November).

Assessment method

Written exam, containing even theory questions.

Optional oral exam, for those who get a grade greater than or equal to 18/30 to the written exam. Mandatory oral exam, for those who get a grade greater than or equal to 14/30 but strictly less than 18/30.

Office hours

Reception to be agreed with the professor via e-mail.

Sustainable Development Goals