Level: bachelor

Course title: Analysis 2 (M4-08)

Status: obligatory

ECTS: 8

Requirements: passed exams in courses Introduction to Analysis (M4-02) and Analysis 1 (M4-05)

Learning objectives

Introduce students to the methods and applications of differential and integral calculus of functions of several variables.

Learning outcomes

Acquiring the basic knowledge necessary for proper understanding of the basics of modern mathematical analysis.

Syllabus

Theoretical instruction

1. Vector functions of one real variable: 3D coordinate system, limit, derivative and integral of vector functions, parametric form of the curve, the equation of the surface;
2. Differential calculus of functions of several variables: convergence (neighbourhoods, sequences, limit), continuity, partial derivatives, differentiability, differential, directional derivative, extreme values, implicitly defined functions;
3. Integral calculus to functions of several variables: multiple integrals, line and surface integrals of scalar and vector functions, Green's, Divergence and Stokes' theorem and application.

Practical instruction

Exercises: tasks and problems accompany the lectures in content.

Weekly teaching load				Other: 0
Lectures: 4	Exercises: 3	Other forms of teaching: 0	Student research: 0	