Course description:

The lecture is a continuation of compulsory subject Mathematical Analysis. In its framework will be presented: functions of several variables, differential equations, analytic functions.

Program of the lecture:

1. Functions of two variables: the boundaries of function, continuous functions.
2. Partial derivatives of functions, differential function, directional derivative.
3. Taylor series. Extremes of function, the use of extremes.
4. Double integrals.
5. The first-order differential equations.
6. The differential equations of second order.
7. The system of differential equations.
8. elementary complex functions.
9. derivative, integral.
10. The integral Cauchy model. Taylor and Laurent series.
11. residue. Applications residuals.

Requirements:

Mathematical analysis 1 (with grade 4, 4 + 5).

Literature:

- R.Rudnicki, Lectures on mathematical analysis, Oxford University Press, 2001.
- M.Gewert, Z.Skoczylas, Mathematical Analysis 2, CiS, Wroclaw, 2000.
- M.Gewert, Z.Skoczylas, Ordinary Differential Equations, CiS, Wroclaw, 2000.
- S.Banach, Calculus, t.1,2. Lviv, 1929.
- P.Romanowski, Fourier series, field theory, Analytic functions and special, The transformation Laplac'a, Warsaw, 1963.
- W.Krysicki, L.Włodarski, Mathematical analysis tasks, I, II, PWN, Warsaw, 2000.