Level: bachelor

Course title: Differential equations (I374)

Status: elective

ECTS: 5

Requirements: none

Learning objectives

To introduce the basic concepts of the theory of differential equations, problems and techniques useful in science and engineering, as well as the basics principles of modelling of the natural phenomena.

Learning outcomes

Minimal: Students should understand the basic concepts of the theory of differential equations and solving techniques of the relevant differential equations.

Desirable: Students should be able to apply the techniques learned in the problems that arise in practice and understand the basic theory of modelling.

Syllabus:

- Differential equations of the first order. Types of integrable differential equations. Implicit differential equations. Singular integral. Models.
- Systems of differential equations. Linear systems. Homogeneous and non-homogeneous systems. Linear systems with constant coefficients.
- Linear equations of the n - th order, homogeneous and non-homogeneous, the variation of parameters. Equations with constant coefficients. Equations with nonconstant coefficients, ordinary and regular singular point. Models

Weekly teaching load				Other: 0
Lectures: 2	Exercises: 2	Other forms of teaching: 0	Student research: 0	