

Study programme(s): Informatics (IM), Teaching Informatics (IC)				
Level: master				
Course title: Differential equations				
Lecturers: Dušanka M. Perišić, Mirjana N. Štrboja				
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 basic principles of the modelling of the natural phenomena.				
Learning outcomes <i>Minimal:</i> Students should understand the basic concepts of the theory of differential equations and techniques for solving the relevant differential equations. <i>Optimal:</i> Students should be able to apply the techniques learned in the problems that arise in practice, and understand the basic theory of modelling.				
Syllabus: <ul style="list-style-type: none"> • 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 nonhomogeneous systems. Linear systems with constant coefficients. Models • 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. 				
Literature 1. В. Марић, М. Будинчевић; Диференцијалне и диференцне једначине, Природно-математички факултет, Нови Сад 2005. 2. В. Марић, М. Будинчевић, А. Павловић; Збирка задатака из диференцијалих и диференцијалних једначина				
Weekly teaching load				Other: 0
Lectures: 2	Exercises: 2	Other forms of teaching: 0	Student research: 0	
Teaching methodology Lectures are conducted using classical teaching methods and are supported by video-beam presentations. Exercises serve to practice and analyse typical problems and their solutions. The ability of applying the theoretical knowledge is checked on two colloquia. The final exam is oral and a student is supposed to demonstrate general understanding of the presented material.				
Grading (maximum number of points 100)				
Pre-exam obligations	points	Final exam	points	
Colloquia	50	Oral exam	50	