

Study programme(s): Mathematics (M), Applied Mathematics (MAP)		
Course title: ELEMENTARY MATHEMATICS (M101)		
Lecturer(s): Petar Đ. Đapić, Nebojša M. Mudrinski		
Course status: compulsory		
ECTS points: 7		
Requirements:		
Learning Objectives Acquiring the basic knowledge and skills of elementary mathematics and basic algorithms that are going to be used during higher courses.		
Learning Outcomes <i>Minimal:</i> Knowing and understanding the basic elementary functions. Capability of solving equations and inequalities in elementary mathematics; fast sketching of elementary functions graphics. Routine in using notation symbols such as \sum and \prod . <i>Desirable:</i> Routine in using of algebraic identities and manipulation with basic set operations and elementary functions. Solving more complex types of equations, inequalities and systems of equations.		
Syllabus <i>Theoretical instructions</i> Basic algebraic identities. Sum, product and mathematical induction. Counting elements of finite sets and fundamental notions of combinatorics. Basic properties of complex numbers, operations and geometric interpretation. Vectors. Elementary functions. <i>Practical instructions</i> Working on concrete examples and solving problems by means of basic algebraic identities and properties of elementary functions. Solving of nonlinear algebraic, exponential, logarithmic, trigonometric equations, inequations, and systems of equations. Working in different number systems. Examples and exercises that can be solved using contraposition principle and contradiction. Examples of statements in the form of necessary and sufficient condition. Disproving statements by constructing counterexamples.		
Literature 1. Đ. Dugošija, Trigonometrija , Krug, 1999. 2. V. Mičić, Ž. Ivanović, S. Ognjanović, Matematika za drugi razred srednje škole , Zavod za udžbenike i nastavna sredstva, Beograd, 2001. 3. Analiza sa algebrom za drugi razred Matematičke gimnazije , Krug, Beograd, 2005. 4. Analiza sa algebrom za treći razred Matematičke gimnazije , Krug, Beograd, 2007.		
Number of active classes	Lectures: 2	Exercises: 4
Teaching methods Traditional lectures, active participation of students. Typical problems and their solutions are practiced during exercises. The capability of using the theoretical material is examined by the individual solving of tasks at two colloquia. At the final oral exam, a student demonstrates in-depth understanding of the material presented.		
Grading (maximum number of points 100)		

Pre-exam obligations	Points	Final exam	Points
Tests	20	oral exam	40
colloquia	40		