Level: bachelor	
Course title: Elementary Mathematics 1 (M4-01)	
Status: obligatory	
ECTS: 5	
Requirements: none	

Learning objectives

To acquire the basic knowledge and skills of elementary mathematics and basic algorithms that are going to be used in higher courses.

Learning outcomes

Minimal

Knowing and understanding of basic elementary functions such as logarithmic, exponential and trigonometric functions. Capability of solving equations and inequalities of elementary mathematics. Fast drawing of elementary functions graphics. Ability of using notation symbols such as Σ and Π.

Desirable

Routine in using algebraic identities and manipulating the basic set operations and elementary functions. Solving more complex types of equations, inequalities and systems of equations.

Syllabus

Theoretical instruction

Basic algebraic identities. Sum, product and mathematical induction. Counting elements of finite sets and fundamental notions of combinatorics. Basic features of complex numbers. Vectors. Elementary functions.

Practical instruction

Working on concrete examples and solving problems by means of basic algebraic identities and features of elementary functions. Solving of nonlinear, algebraic, exponential, logarithmic and trigonometric equations and inequalities 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.

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