Discipline	SYSTEM ANALYSIS code: 21 summer semester	
Specialty	Computer Systems and Technologies	
ECTS credits: 6	Form of assessment: exam	
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Department	Software and Internet Technologies	
Faculty	Faculty of Computing and Automation	

Learning objectives:

The aim of the discipline "System Analysis" is to examine different real technical, economic, biological, etc. systems for which mathematical models are used, sometimes involving hundreds and thousands of dependencies and numerical parameters. The analysis and synthesis of such systems requires reliable computational algorithms and computer programs.
Expanding the general knowledge of students in the above areas as well as applying the considered theories and methods will help future computing professionals to develop effective applications. No matter how new is the computer technology to be used, it is important to know the object (system) for which the computer program is intended. A qualitative end product cannot be created without knowing the basic principles in the management of different types of objects and systems and without applying mathematical modelling.

CONTENTS:

Training Area	Hours lectures	Hours seminar exercises
The first part discusses systems whose parameters are not time functions. The description of such systems is usually given by systems of linear and non-linear algebraic equations. The analysis and synthesis of such systems also involves the use of optimization methods. This group can include real economic models for optimization and decision making.	10	10
The second part presents the basics of methods related to description, modelling, identification and synthesis analysis of automatic control systems.	10	10
The third part deals with the modelling of systems with analogue and digital-analogue neural networks. Some models of financial systems are considered.	10	10
TOTAL: 60 h	**30**	**30**