Discipline	COMPUTER SYSTEMS FUNDAMENTALS code: *02* **winter semester**	
Specialty	Computer Systems and Technologies	
ECTS credits: **7**	Form of assessment: exam	
Lecturer	Assoc. Prof. Zheyno Zheynov, PhD Room 407 A TB +359 52 383 260 E-mail: zh_viv@tu-varna.bg	
Department	Computer Science and Technologies	
Faculty	Faculty of Computing and Automation	

Learning objectives

The course introduces the students to:

- the purpose and composition of real computer systems - hardware and software (system and applied);
- the structural elements of the computation process and the ways of its presentation, as well as the synthesis of algorithms for the realization of basic (elementary) computing processes;
- the algebra of the two-sign logic (Boolean algebra), the representation of the logic functions, the synthesis and the study of simple combinational logic circuits.

the types of data, the ways of their presentation in the computer systems, the transformation of the numerical data into different positional number systems, basic arithmetic operations with numerical data.

CONTENTS:

Training Area	Hours lectures	Hours seminar exercises
Main composition of the real computer system - hardware and software part; Devices - types, purpose; Software - system, user; Hierarchical structure of software; Operating systems - types; File systems - types, organization; Virus, virus protection.	8	8
Concept of computation process; Presentation of the computation process; Concept for algorithm; Basic algorithmic structures.	8	8
Algebra of logic. Logical functions and Logic circuits - synthesis and analysis.	6	6
Types of data; Presentation of the data; Numerical data; Concept of number system; Convert numbers from one number system to another; Fundamentals of the arithmetic of binary and binary encoded decimal numbers.	8	8
TOTAL: 60 h	**30**	**30**