

Course name: **Computer Systems Architecture**

No. of ECTS: **4**

Aim:

Familiarizing students with the construction of computers, methods of data representation and processing by PC, low-level mechanisms of its work, construction and creating computer programs.

Course content:

- The history of counting and calculating machines
- Classic concept of von Neumann computer, Harvard architecture
- Numeric Systems
- Encoding Information
- Fundamentals of logic system
- Arithmetic basics of computers
- The concept of the microprocessor system
- RAM
- External Devices
- Intel x86 processor
- Elements of computer software
- Classification of computers
- Parallel computers and supercomputers
- Basics of creating applications in assembler - sections, data declarations
- 16-bit applications, calling a bios and dos function - data display, downloading data, simple control instructions, the use of macros
- 32-bit applications, the use of winapi functions - data display, downloading, creating gui

Skills:

Good understanding and ability of use-in-practice information concerning topics included in the course content. Ability to create programs in assembler that use the operating system, ability to represent numbers in systems other than the decimal (binary, hexadecimal, octal), ability to perform simple operations on above mentioned representations, ability to convert between number bases

Form of teaching:

Lectures, practical classes, labs, projects