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| Discipline „computer organization and architectures”, code: 16 |
| Annotation: The first part of the discipline presents knowledge about the structure and organization of the digital computing machine. For this purpose, the presentation of the data and algorithms of the executable operations is considered. Based on the principles of building modern digital computing machines, it motivates the composition of the necessary devices and systems. In this connection, the structure and organization of the operation of arithmetic-logic devices, storage devices, control devices are considered. The methods of organization and the means of realization of the command system, the storage system, the interruption system and the system of I / O exchange are considered.  The material included in the second part of the discipline is dedicated to the specifics of modern computer architectures. Emphasis is placed on CPU pipelined work, processor architecture with multiple functional drives, and distributed memory processors. |
| Main issues of the syllabus content:   * Presentation of the data * Presentation of logical and operational structures * Logical structure of storage device * Organization of the computation process * Organization of the storage system * Organization of the control system * Architecture of modern processors. Introduction to parallel processing. Conveyor execution of commands in the processor * Processors with multiple functional devices. Distributed memory processors * Vector processors * Memory architecture in parallel computers. Architecture of external memory in parallel computers |