1.	**Course title**	Modern Computer Architectures
2.	**Course code**	F18L3S158
3.	**Semester**	6
4.	**Unit offering the course**	Faculty of Computer Science and Engineering
5.	**ECTS**	6
6.	**Goals of the study programme**	
	Understanding the concepts and implementations of modern processors. Analysis of modern processors. The student will be able to design, maintain and program computer systems with modern processors and processing elements	
7.	**Contents of the study programme**	
	Contemporary microprocessors, post RISC technology, superscalar and VLIW processors, in-order and out-of-order processing, renaming registers, branching prediction, issuing instructions, storing and submitting instructions, executing instructions, completing instructions, and retrieving instructions. Design of memory architecture. Analysis of modern Intel, IBM, and Sun processors. Clusters, Multiprocessors with shared memory and their performance. Programming with multiple processors. Advanced graphics processing units and their utilization. Algorithmic techniques for programming the GPU.	