Institute of Cyberphysical Systems				2024/25 academic year I. semester			
Name of the subject:	Code of the subject:	Credits:		Weekly hours:			
					lec	sem	lab
Modern computer architectures	NIXKA2HBNE	2	full-time		2	0	0
Responsible person for the subject: Prof. Dr. Dezső SIMA				Classification: professor emeritus			
Subject lecturer(s): Prof. Dr. Dezső SIMA							
Prerequisites:	NBXSS1EBNF		Introduction to Computer Architectures				
Way of the assessment:	exam						

Course description	
Goal:	The lecture aims at the familiarization of students with key notions, main relationships and unfolding trends concerning processors. Case examples help to understand the curriculum.
Course description:	An overview of the evolution of the Intel Core family in client, HEDT, server and mobile processors. The emergence and evolution of AMD's Zen-based architectures. The emerging competition between Intel and AMD in the field of processors. Evolution of the ARM ISA and ARM Cortex processor families. The emergence and development of ARM-based Windows devices.

Lecture schedule	
Education week	Topic
1.	Overview of Intel's Core family
2.	Overview of Intel's Core family
3.	Overview of Intel's Core family
4.	Overview of Intel's Core family
5.	Overview of AMD's Zen family
6.	Overview of AMD's Zen family
7.	Overview of AMD's Zen family + Mid-term test
8.	Evolution of the ARM ISA and ARM Cortex processor families
9.	Evolution of the ARM ISA and ARM Cortex processor families
10.	Evolution of the ARM ISA and ARM Cortex processor families
11.	The emergence and development of ARM-based Windows devices
12.	The emergence and development of ARM-based Windows devices

Mid-term requirements	
Conditions for obtaining a mid-term grade/signature	Mid-term test, exam.

Assessment schedule	
Education week	Topic
7.	Overview of Intel's Core family
7.	Overview of AMD's Zen family

Method used to calculate the *mid-term grade* (to be filled out only for subjects with mid-term grades)

Type of the replacement	
Type of the replacement of written test/mid-term grade/signature	

Type of the exam (to be filled out only for subjects with exams)
Multiple-choice or explanatory written exam

Calculation of the exam mark (to be filled only for subjects with exams)
25% of the test result and 75% of the exam result are taking into account for the end-of-semester grade. At the end of the lectures, the acquired knowledge of the students will be answered through answering the questions. By achieving good average results during the semester ($\geq$ 75%), students can earn bonus points (about 10% of the max. exam points) for their exams.

Final grade calculation methods:

0%-49% 1 (failed)
50%-62% 2 (satisfactory)
63%-74% 3 (average)
75%-84% 4 (good)
85%-100% 5 (excellent)

References	
Obligatory:	Electronic textbook available in the Moodle.
Recommended:	
Other references:	