Computer Architecture and Organization

Course code	student workload	credits (according to ECTS)	semester	frequency	duration
COM60011	90 hours	4.5 ECTS	Sem. 1	each odd-semester	16 meetings

1	Types of courses	contact hours	independent study	class size
	Compulsory (Faculty level)	63 hours	27 hours	40 students

5 Prerequisites for participation

2 Learning outcomes

IF-ILO-3
Graduates are able to develop professional careers in the field of computer science based on quality aspects, data-based decision making, be responsible, and make continuous improvements.

IF-ILO-5
Mastering the structure and how the computer systems work both in general and in detail at various levels of abstraction and how the interaction between the computer system and its environment

IF-ILO-7
Mastering the theoretical concept and principles of computer science, especially in the aspect of algorithms, programming, intelligent systems, information management, parallel and distributed computing, information security, human-computer interaction, software engineering, and fundamentals of computer systems and networks.

IF-ILO-11
Graduates are able to plan, develop, manage, and analyze the computer network-based system and the services running on top of them by considering the network security aspects.

3 Subject aims

1. Students are able to describe the history of the development of computer evolution
2. Students are able to describe the architecture and organization of the processor (CPU) on a computer
3. Students are able to describe the architecture and organization of memory on a computer
4. Students are able to describe the interface of input-output (IO) and other peripherals that exist or are connected to a computer

	5. Students are able to describe the components of a digital system for those on a computer 6. Students are able to describe logical and arithmetic operations performed by computer 7. Students are able to describe the Instruction Set Architecture (ISA) that exists and used on computer 8. Students are able to describe the multicore architecture that exists on computer 9. Students are able to describe the distributed system architecture used on computer
4	**Teaching methods** Lectures, case study, class discussion, presentation
6	**Assessment methods** Assignment, mid-term examination, end-term examination, project evaluation, practical-skill assessment
8	**This module is used in the following degree programmes as well** Informatics Engineering, Computer Engineering, Information Technology Education, Information Technology
10	**Responsibility for module** ***Name of lecturers***
11	**Other information** 1. William Stallings, "Computer Organization and Architecture Designing for Performance Eighth Edition", Prentice Hall, 2019 2. David A. Patterson, "Computer Organization and Design The Hardware and Software Interface", Elsevier, 2012 3. David A. Patterson, John L. Hennessy. "Computer Architecture: A Quantitative Approach", Elsevier, 2012