UCLouvain

2022

## Computer Hardware Principles

5.00 credits	30.0 h + 30.0 h	Q2



## This learning unit is not open to incoming exchange students!

Teacher(s)	Bonaventure Olivier ;				
Language :	French				
Place of the course	Charleroi				
Main themes	The course aims to introduce students to the operating principles of computers to enable them to understand how their programs are executed on a simple computer.  Representation of information in binary form (integer and real numbers, characters, etc.) Combinatorial logic (logic gates, construction of simple circuits) Memory management (RAM, ROM,) Synchronous digital circuits and role of the clock Construction of a simple microprocessor Inputs-Outputs and storage devices assembly language				
Learning outcomes	At the end of this learning unit, the student is able to:  Describe the main components of a computer and their role Explain how information and programs are represented in memory Design a small logic circuit implementing a simple combinatorial function Read and write simple assembly programs				
Evaluation methods	First session  Oral exam Continuous evaluation of mini-projects (these count for 50% of the points if they are favorable to the student)  Second session Oral exam only (mini-projects no longer count in the second session)  Students who actively contribute to educational materials can earn bonus points.				
Teaching methods	Lecture     Exercise sessions     Mini-projects for building the main components of a computer				
Content	Representation of information in binary form (integer and real numbers, characters, etc.) Combinatorial logic (logic gates, construction of simple circuits) Memory management (RAM, ROM,) Synchronous digital circuits and role of the clock Construction of a simple microprocessor Inputs-Outputs and storage devices assembly language				
Bibliography	The Elements of Computing Systems, By Noam Nisan and Shimon Schocken (MIT Press) Notes de cours, disponibles via https://sites.uclouvain.be/LSINC1102/pfo/				
Faculty or entity in charge	SINC				

Programmes containing this learning unit (UE)						
Program title	Acronym	Credits	Prerequisite	Learning outcomes		
Bachelor in Computer Science	SINC1BA	5		•		