lsinc1102
2024

Computer Hardware Principles

UCLouvain

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 :** 1 • 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		🔍