UCLouvain

linfo1140

2022

Electronic basics of computing

5.00 credits	30.0 h + 30.0 h	Q2

Teacher(s)	Bonaventure Olivier ;
Language :	French
Place of the course	Louvain-la-Neuve
Prerequisites	This course assumes that the ability to deal with simple problems via mathematical equations is acquired. This approach will be expanded here to problems related to electricity and electronics. Basic notions in physics (such as the existence of forces, the notion of energy) are also supposed to be known as taught in secondary school.
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	An oral or written exam (depending on the session) will be organized, in addition to a possible ongoing evaluation. Details are defined on the course website.
Inline resources	https://moodleucl.uclouvain.be/course/view.php?id=4333
Bibliography	The Elements of Computing Systems, Noam Nisan and Shimon Schocken (MIT Press) Notes du cours de Principes de fonctionnement des ordinateurs
Faculty or entity in charge	INFO

Programmes containing this learning unit (UE)				
Program title	Acronym	Credits	Prerequisite	Learning outcomes
Bachelor in Computer Science	SINF1BA	5		🔍