

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	<p>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.</p> <ul style="list-style-type: none"> • 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	<p>At the end of this learning unit, the student is able to :</p> <ol style="list-style-type: none"> 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	<p>First session</p> <ul style="list-style-type: none"> • Oral exam • Continuous evaluation of mini-projects (these count for 50% of the points if they are favorable to the student) <p>Second session</p> <ul style="list-style-type: none"> • Oral exam only (mini-projects no longer count in the second session) <p>Students who actively contribute to educational materials can earn bonus points.</p>
Teaching methods	<ul style="list-style-type: none"> • Lecture • Exercise sessions • Mini-projects for building the main components of a computer
Content	<ul style="list-style-type: none"> • 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	<p>The Elements of Computing Systems, By Noam Nisan and Shimon Schocken (MIT Press)</p> <p>Notes de cours, disponibles via https://sites.uclouvain.be/LSINC1102/pfo/</p>
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		