UCL Université catholique de Louvain

LSINF1252

2010-2011

Introduction to computer systems

5.0 credits	30.0 h + 30.0 h	2q

Teacher(s) :	Lobelle Marc ;
Language :	Français
Place of the course	Louvain-la-Neuve
Inline resources:	> http://foditic.org/SINF1252_10/
Prerequisites :	Main concepts related to programming in a high-level language (e.g. FSAB1402)
Main themes :	-- Abstraction levels in computing systems -- Architectures of processors -- Memory hierarchy -- Peripherals and peripheral interfaces -- Techniques for performance enhancement -- Machine language, assembly language and C language -- Mission and functions of operating systems -- Key concepts in operating systems -- Use of operating system functions in C programs -- C programming on computer without OS.
Aims :	Students completing successfully this course will be able to -- explain the functionalities provided by the different hierarchical levels of the architecture of a computing system, from the physical machine to software components directly supporting the applications -- explain typical system architectures their components, as well at the hardware as the operating system level. -- use and configure efficiently functions and services provided by computers and operating systems -- compare various computer implementations and identify their strengthes and weaknesses -- know and understand the implications of the orders of magnitude of measurable characteristics of computing systems *The contribution of this Teaching Unit to the development and command of the skills and learning outcomes of the programme(s) can be accessed at the end of this sheet, in the section entitled "Programmes/courses offering this Teaching Unit".*
Evaluation methods :	-- Written exam -- A test on the C language will be held after the mission 3. This test is taken into account for the final grade: one of the exam questions will be identified as being "equivalent" to the test: if the grade of the test is better than the grade for this question, it will replace it.
Teaching methods :	The course is organized into 6 successive missions of two weeks each with a learning component and an enforcement component. Each mission consists of the following steps: -- A lecture meeting at which the material of the mission is briefly introduced (about 1 hour). -- An introductory session to the work practices of the mission, immediatly following the session lecture (about 1 hour) and you will receive simple exercises to do for the second practical session of the mission. -- Students discover the course material individually during the days following the lecture. They identify the points where they are a problem: difficulty of understanding or points they desire to deepen -- These items are discussed at a group meeting in which individual teachers. The group chooses 8 questions and is organized to respond, with the help of the teacher. -- Answers are posted on the forum of the group before the end of the mission and corrected by the teacher. -- A second practical session takes place in the middle of the mission, the simple exercises offered at the introductory session are corrected and more substantial exercises are introduced.
Content :	-- Levels of abstraction in computer systems -- Processor architectures -- Memory hierarchy -- The devices and their interfacing -- Techniques for Improving Performance -- Machine language, assembly language and C language -- Roles and Functions of Operating Systems -- Basic concepts of operating systems -- Using functions of an operating system in programs -- C Programming on a computer without operating system

Bibliography :	documents online
Cycle and year of study :	> Master [120] in Linguistics > Bachelor in Engineering > Bachelor in Computer Science > Bachelor in Engineering : Architecture > Bachelor in Economics and Management > Bachelor in Mathematics
Faculty or entity in charge:	INFO