linfo1252

2023

Informatic Systems

5.00 credits	30.0 h + 30.0 h	Q1

Teacher(s)	Riviere Etienne ;
Language :	French
Place of the course	Louvain-la-Neuve
Prerequisites	This course assumes that the student already masters the programming skills in C language targeted by LEPL1503 and the algorithmic notions covered by the LEPL1402. *The prerequisite(s) for this Teaching Unit (Unité d'enseignement – UE) for the programmes/courses that offer this Teaching Unit are specified at the end of this sheet.*
Main themes	• Levels of abstraction in computer systems • Processor architectures • Machine language, assembly language and C language • Roles and functions of operating systems • Using the features of an operating system in applications • Processes and threads: concepts, problems and solutions • Multi-processor systems
Learning outcomes	**At the end of this learning unit, the student is able to :** Given the learning outcomes of the "Bachelor in Engineering" program, this course contributes to the development, acquisition and evaluation of the following learning outcomes: • AA1.1, AA1.2 • AA2.4-7 • AA4.1, AA4.4 Given the learning outcomes of the "Bachelor in Computer Science" program, this course contributes to the development, acquisition and evaluation of the following learning outcomes: • S1.I4 • S2.2-4 • S5.2, S5.5 Students who have successfully completed this course will be able to • explain which functions are fulfilled by the different levels of the hierarchy ranging from the physical machine to the level on which the applications are based • explain the main architectures of operating systems and processors, as well as the main devices and techniques used to realize them • use and effectively implement the various services and functions offered by processors and operating systems

Evaluation methods	January:
	- participation in mandatory activities (10%)
	- continuous evaluation, mini projects (30%)
	- exam (60%)
	September:
	- participation in mandatory activities -- maintained from January session, cannot be redone (10%)
	- personal exercises and project (30%)
	- exam (60%)
	Continuous evaluation activities are certification. Therefore, deontology rules in terms of plagiarism or any kind of fraud and academic misconduct apply strictly. Continuous evaluation activities are all strictly individual unless specifically mentioned by the professor. For activities allowed by pairs of students, any collaboration with a person outside of the student pair will be a case of fraud. The use of generative AIs is tolerated to correct the style, grammar, and spelling of text previously authored by the student but forbidden for generating text based on a prompt or for generating code. Plagiarism detection solutions will be applied systematically.
	The continuous evaluation will lead to a grade over 8 points, communicated before the exam in January or August. These 8 points include the participation grade. Any violation of deontological principles will lead to a grade of 0/8 for the entirety of the continuous evaluation, and the denunciation of the student(s) to responsible authorities.
	Formative activities may become certificative and cover a part to all of the weight of the exam if the circumstances impose it.
	The professor may ask for an additional oral exam for any certificative activity, including any continuous evaluation activity and the exam. An additional exam is mandatory and part of the evaluation process.
	The exam may use all or a subset of the following evaluation modalities. The respective proportion of points for each part is announced at the beginning of the exam:
	• open questions on the course content
	• open problems requiring an application of skills and knowledge acquired during the course
	• multiple-choice and multiple-answer questions under the principle of the "standard-setting". An incorrect answer to one of the questions cannot lead to a negative grade, and the exam part as a whole cannot grant negative points. However, a minimum threshold (announced in the exam) of correct answers is necessary before effectively acquiring points for this exam part.
Teaching methods	- lectures;
	- online exercises and self-training using the Inginious platform;
	- exercices and work sessions with tutors.
	Some of these activities may be organized online.
Content	The course presents the organization and the use of computer systems, and the principles and implementation of operating systems.
Inline resources	A link to the online syllabus is available on the Moodle page of the course.
Faculty or entity in charge	INFO

Programmes containing this learning unit (UE)				
Program title	Acronym	Credits	Prerequisite	Learning outcomes
Master [120] in Data Science : Statistic	DATS2M	5		🔍
Specialization track in Computer Science	FILINFO	5		🔍
Bachelor in Computer Science	SINF1BA	5	LEPL1402 AND LEPL1503	🔍
Mineure Polytechnique	MINPOLY	5		🔍