Systèmes d'exploitation

Lecturers
Joël GOOSSENS (Coordinator) and Olivier MARKOWITCH

Course mnemonic
INFO-F201

ECTS credits
5 credits

Language(s) of instruction
French

Course period
First term

Campus
Plaine

Course content

How does a UNIX kernel work, and how to use such a system to build a distributed application.

Objectives (and/or specific learning outcomes)

1. Understand how modern operating systems are composed and operate in order to offer applications and users a simple and efficient abstraction which hides the inherent complexity of the hardware (processors, cores, screens, network interfaces, memories, disks, etc.)). The student will have to understand the generic conceptual mechanisms (i.e., not specific to a particular operating system). 2. The student will have to understand how these concepts are concretely implemented in a target operating system (eg, Linux). 3. Provide the student with the tools necessary for the development of "multi-process" and "multi-thread" applications close to the operating system that use its APIs (ie, "system calls") in a high-level host language (C for example for Linux). 4. Being able to write "scripts" with the basic operating system commands in one of the shell scripting languages.

Pre-requisits and co-requisits

Pre-requisites courses

INFO-F102 | Fonctionnement des ordinateurs | 5 crédits and INFO-H2001 | Programmation orientée objet | 5 crédits

Co-requisites courses

INFO-H304 | Compléments de programmation et d'algorithmique | 5 crédits

Course having this one as pre-requisit

INFO-F309 | Administration de systèmes | 5 crédits

Course having this one as co-requisit

INFO-F303 | Réseaux, information et communications | 5 crédits

Teaching method and learning activities

1. Introduction to operating systems. 2. Processes and threads. 3. Memory management. 4. File system 5. Input / Output. 6. Deadlock 10. Case study: Linux

References, bibliography and recommended reading

Andrew S. Tanenbaum, Modern Operating Systems, Third edition, Prentice Hall, 2009.

Other information

Place(s) of teaching

Plaine

Contact(s)

Lecturer: Joël Goossens - email: joel.goossens@ulb.ac.be - Plaine campus, building NO, floor 8th, room N8.114

Evaluation method(s)

written examination and Project

Evaluation method(s) (additional information)

Written for the evaluation of practical work Oral for theory assessment

Determination of the mark (including the weighting of partial marks)

Written (15 points) and projects (5 points), total 20 points arithmetic mean.

Main language(s) of evaluation

French

Programmes

Programmes proposing this course at the faculty of Sciences

BA-INFO | **Bachelor in Computer science** | unit 2

Programmes proposing this course at the Brussels School of Engineering

BA-IRCI | **Bachelor in Engineering Sciences** | option Bruxelles/unit 3