

Presentation of the class

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CSC4508 – Operating systems

2022–2023

1 Presentation of the class

Objectives of the class:

- Understand the internals of operating systems
- Know how to interact with the OS from a program

Structure of the class:

- [U] “ userland ” oriented sessions
- [K] “ kernel ” oriented sessions
- [G] “ more general ” sessions

1.1 Organization

1. Processes
 - CI1 **[U]** Threads
 - CI2 **[U]** Concurrent programming
 - CI3 **[G]** Synchronization
 - CI4 **[K]** System calls
 - CI5 **[K]** Interruption and scheduling
 - CI6 **[K]** Sprint: finalization of the scheduler
 2. Memory
 - CI7 **[U]** Virtual memory
 - CI8 **[K]** Memory Management Unit
 - CI9 **[G]** Architecture
 - CI10 **[K]** Sprint
 3. Input/Output
 - CI11 **[U]** Input/Output
 - CI12 **[U]** Synthesis: mini-project
 - CI13 **[K]** File systems
 - CI14 **[K]** Sprint
- CI15 Exam (lab)

1.2 Kernel sessions: XV6

During the **[K]** sessions, you will develop an OS

- Based on the **xv6** OS
- development of new OS mechanisms
- *sprint* sessions:
 - ◆ finalization of development
 - ◆ evaluation by teachers

1.3 Evaluation

Evaluation:

- 20% - Continuous assessment during sprints:
 - ◆ “how did you implement this mechanism of the OS?”
 - ◆ “what happens if X?”
- 80% - graded lab exam with several parts :
 - ◆ course question(s)
 - ◆ explain how you implemented an OS mechanism
 - ◆ develop an application

1.4 Evaluation of the class

- At the end of the class, students evaluate the class.
- Objective: improve the class