

# Presentation of the class

François Trahay



**CSC4508 – Operating systems**  
**2021–2022**

# 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