

Content

Course Code	Course Name	Semester	Theory	Practice	Lab	Credit	ECTS
INF333-A	Operating Systems	6	2	0	2	3	5

Prerequisites	INF116
Admission Requirements	INF116

Language of Instruction	French
Course Type	Compulsory
Course Level	Bachelor Degree
Objective	The course focuses on processes, memory management, IO management, file systems, and inter-process communication/synchronization. The C programming language is used in laboratory work to put the knowledge gained in class into practice.
Content	<ol style="list-style-type: none">1. Introduction, OS Types, Basic Concepts, Course Scope2. OS Components, Hardware Classes, File Systems3. Process, Thread, System Calls, Kernel and User-level Context Switching4. Synchronization Primitives, Producer/Consumer Pattern5. Scheduling6. Security, Protection7. Midterms8. Virtual Memory I9. Virtual Memory II10. Efficient Cache Management, Consistency and Coherence11. High-Performance Locks, Fair Scheduling, Deadlocks, Livelocks12. Dynamic Memory Management13. Linking, Dynamic Libraries, Deployment14. Virtual Machines, Containers, Jails, Sandboxing
References	Book: Operating System Concepts, 10th Ed. Silberschatz, Galvin, Gagne Lecture Notes: https://burakarslan.com/inf333 Course Project: https://pintos-os.org/

Theory Topics

Week	Weekly Contents
1	Introduction, OS Types, Basic Concepts, Course Scope
2	OS Components, Hardware Classes, File Systems
3	Process, Thread, System Calls, Kernel and User-level Context Switching
4	Synchronization Primitives, Producer/Consumer Pattern
5	Scheduling
6	Security, Protection
7	Midterm Break
8	Virtual Memory I
9	Virtual Memory II
10	Efficient Cache Management, Consistency and Coherence
11	High-Performance Locks, Fair Scheduling, Deadlocks, Livelocks

Week	Weekly Contents
12	Dynamic Memory Management
13	Linking, Dynamic Libraries, Deployment
14	Virtual Machines, Containers, Jails, Sandboxing