Content

Course Code	Course Name	Semester	Theory	Practice	Lab	Credit	ECTS
INF333-B	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	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. Midterms 8. Virtual Memory I 9. Virtual Memory II 10. Efficient Cache Management, Consistency and Coherence 11. High-Performance Locks, Fair Scheduling, Deadlocks, Livelocks 12. Dynamic Memory Management 13. Linking, Dynamic Libraries, Deployment 14. 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