

[GIE304] OPERATING SYSTEMS

GENERAL INFORMATION

Studies	DEGREE IN COMPUTER ENGINEERING		Subject	?
Semester	1	Course	3	Mention / Field of specialisation
Character	COMPULSORY		Language	CASTELLANO/EUSKARA
Plan	2022	Modality	Face-to-face	Total hours
Credits	4,5	Hours/week	4.06	73 class hours + 39.5 non-class hours = 112.5 total hours

PROFESSORS

ROMAN TXOPITEA, IBAI

REQUIRED PREVIOUS KNOWLEDGE

Subjects	Knowledge
(No specific previous subjects required)	(No previous knowledge required)

LEARNING RESULTS

LEARNING RESULTS	KC	SK	AB	ECTS
GIR301 - To Apply the fundamental principles and basic techniques of parallel, concurrent, distributed and real-time programming and knowledge of the functionalities of Operating Systems for the development of applications		x		3,78
G-RTR1 - To develop interdisciplinary projects specific to their specialty and of gradual complexity, - becoming aware of respect for human rights and fundamental rights, and analyzing and assessing the impact of the proposed solutions on the SDGs - to acquire and/or apply basic, advanced and /or avant-garde, demonstrating the ability to work in multidisciplinary teams and/or undertake further studies with a high degree of autonomy		x		0,4
G-RTR2 - To express information, ideas and the arguments that support them in an orderly, clear and coherent manner, orally and in writing, based on quality information, self-made or obtained from different sources, using inclusive and non-discriminatory language		x		0,32
Total:				4,5

KC: Knowledge or Content / SK: Skills / AB: Abilities

CONTENTS

1. Introduction to operating systems
 - 1.1 Organization, structure and services
2. Process management
 - 2.1 Processes and Threads: State Models
 - 2.2 Concurrency issues
 - 2.2.1 Mutual exclusion and synchronization
 - 2.2.2 Deadlocks and starvation
 - 2.2.3 Archetypal problems: producer/consumer, readers/writers.
 - 2.3 Synchronization mechanisms
 - 2.3.1 Synchronization by means of semaphores
 - 2.3.2 Synchronization through monitors
 - 2.3.3 Synchronization using message queues
3. Memory management and virtual memory
 - 3.1 Segmentation and paging
 - 3.2 Virtual memory

LEARNING RESOURCES AND BIBLIOGRAPHY

Learning resources	Bibliography
Subject notes	https://labur.eus/biblio-GIE304
Moodle Platform	
Specific Master Software	