Anno Accademico 2021/2022

OPERATING SYSTEMS	
Enrollment year	2019/2020
Academic year	2021/2022
Regulations	DM270
Academic discipline	ING-INF/05 (DATA PROCESSING SYSTEMS)
Department	DEPARTMENT OF ELECTRICAL,COMPUTER AND BIOMEDICAL ENGINEERING
Course	ELECTRONIC AND COMPUTER ENGINEERING
Curriculum	Informatica
Year of study	3°
Period	2nd semester (07/03/2022 - 17/06/2022)
ECTS	6
Lesson hours	45 lesson hours
Language	Italian
Activity type	WRITTEN AND ORAL TEST
Teacher	LOMBARDI LUCA (titolare) - 6 ECTS
Prerequisites	The contents of Fondamenti di Informatica and Calcolatori Elettronici.
Learning outcomes	The course aims at explaining the functions and the architectures of modern operating systems. After a brief introduction on the history of operating systems and their relationship with computer technology, the course describes the problems and the main solutions for memory management (especially virtual memory), CPU scheduling and processes, deadlock and semaphores. Other main topics are I/O management, the file system and some key aspect of security, criptography.

Course contents	Introduction to operating systems History of the operating systems. Classification of operating systems. CPU and memory management CPU states. Definition of process and sheduling. Interprocess comunication: semaphores and deadlock. Memory management. Virtual memory. File system Files, space allocation on disks. Filesystem management. I/O scheduling. Security The security of operating systems. Virus, logical bombs, trapdoor ... Introduction to cryptography.
Teaching methods	Lectures conducted using presentations projected on screen (available to students) and insights using the chalkboard.
Reccomended or required readings	Silberschatz, Galvin, Gagne. Operating System Concepts, 7th . Edition. Wiley Andrew S Tanenbaum Albert S Woodhull. Operating Systems Design and Implementation, 3/E .. Prentice Hall
Assessment methods	At the end of the course, a written test will be carried out on all the topics discussed. The test consists of open-ended theoretical questions and practical exercises.
Further information	
Sustainable development goals - Agenda 2030	$lbl_legenda_sviluppo_sostenibile