



OPERATING SYSTEMS	
Enrollment year	2017/2018
Academic year	2019/2020
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 (02/03/2020 - 12/06/2020)
ECTS	9
Lesson hours	70 lesson hours
Language	Italian
Activity type	WRITTEN AND ORAL TEST
Teacher	LOMBARDI LUCA (titolare) - 9 ECTS
Prerequisites	The contents of Fondamenti di Informatica and Calcolatori Elettronici.
Learning outcomes	<p>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, cryptography.</p>
Course contents	<p>Introduction to operating systems History of the operating systems. Classification of operating systems.</p> <p>CPU and memory management</p>

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