



UNIVERSITÀ DI PAVIA

Anno Accademico 2014/2015

OPERATING SYSTEMS	
Enrollment year	2014/2015
Academic year	2014/2015
Regulations	DM270
Academic discipline	ING-INF/05 (DATA PROCESSING SYSTEMS)
Department	DEPARTMENT OF MATHEMATICS "FELICE CASORATI"
Course	MATHEMATICS
Curriculum	PERCORSO COMUNE
Year of study	1°
Period	2nd semester (02/03/2015 - 12/06/2015)
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, cryptography.
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 scheduling. Interprocess

	communication: 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 (hours/year in lecture theatre): 42 Practical class (hours/year in lecture theatre): 6 Practicals / Workshops (hours/year in lecture theatre): 0
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	The exam consists of a singol final written test.
Further information	The exam consists of a singol final written test.
Sustainable development goals - Agenda 2030	\$lbl_legenda_sviluppo_sostenibile