

SSN COLLEGE OF ENGINEERING
DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING
COURSE PLAN

SUBJECT NAME	:	OPERATING SYSTEMS
SUBJECT CODE	:	CS6401
DEGREE / YEAR/ SECTIONS	:	B.E. CSE / II YEAR/ A & B
BATCH	:	2016-2020
SEMESTER	:	IV (2017-18: EVEN)
NAME OF THE STAFF	:	S.RAJALAKSHMI & S.LAKSHMI PRIYA

Teaching Methodology and aids : **PowerPoint presentations\Projector\Use of ICT\Chalk and Blackboard**
(Content Delivery Method (CDM)) (For all topics)

S.No.	Unit No.	Topic	CDM	No. of Periods		Remarks
				Plan	Actual	
UNIT I - OPERATING SYSTEMS OVERVIEW						
1.	I (9 Hrs)	Computer System overview – Basic elements, Instruction execution, Interrupts and memory hierarchy		1		
2.		Cache Memory, Direct Memory Access		1		
3.		Multiprocessor and Multicore Organization		1		
4.		Operating system overview- objectives and functions, Evolution		1		
5.		Computer system organization		1		
6.		operating system structures		1		
7.		System calls		2		
8.		System programs, OS generation and system boot		1		
UNIT II – PROCESS MANAGEMENT						
9.	II (11 Hrs)	Processes: Process concept, Process scheduling, Operations on processes, Cooperating processes		1		
10.		Interprocess communication		1		
11.		Threads: Multi-threading models, Multicore Programming, Windows 7 - Thread and SMP Management		1		
12.		Process Synchronization: The critical-section problem, Synchronization hardware		1		
13.		Semaphores		1		

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14.		Classic problems of synchronization , critical regions, Monitors		1		
15.		CPU Scheduling: Scheduling criteria, Scheduling algorithms – FCFS, SJF	T	1		
16.		Scheduling algorithms – Priority and Round Robin		1		
17.		Deadlock: System model , Deadlock characterization , Methods for handling deadlocks		1		
18.		Deadlock prevention, Deadlock avoidance	T	1		
19.		Deadlock detection , Recovery from deadlock		1		
UNIT III - STORAGE MANAGEMENT						
20.	III (9 Hrs)	Contiguous memory allocation , Paging, Page table structure	T	2		
21.		Segmentation, 32 & 64 bit architecture examples		1		
22.		Virtual Memory: Background , Demand paging		1		
23.		Process creation , Page replacement		1		
24.		Tutorial on page replacement algorithms	T	1		
25.		Allocation of frames		1		
26.		Thrashing		1		
27.		Allocating Kernel memory, OS Examples		1		
UNIT IV – I/O SYSTEMS						
28.	IV (9 Hrs)	Mass-Storage Structure: Disk scheduling and Management	T	1		
29.		File system Storage, File concepts		1		
30.		Directory and Disk structure		1		
31.		Sharing and protection		1		
32.		File-system implementation – File system structure		1		
33.		Directory Structure		1		
34.		Allocation methods		1		
35.		Free-space management		1		
36.		I/O Systems		1		
UNIT V – CASE STUDY						

S.No.	Unit No.	Topic	CDM	No. of Periods		Remarks
				Plan	Actual	
37.	V (8 Hrs)	Linux systems – Basic concepts		1		
38.		System Administration- Requirements for a Linux system Administrator		1		
39.		Setting up a Linux Multifunction server		1		
40.		Domain name system		1		
41.		Setting up local network services		1		
42.		Virtualization – Basic concepts		1		
43.		Setting up Xen,VMware on Linux host and adding guest OS		2		
Total				46		

Total Number of Syllabus Hours: 45

Total Number of Planned Hours: 46

Content Delivery Methods (CDM): T- Tutorial

TEXT BOOK:

Abraham Silberschatz, Peter Baer Galvin and Greg Gagne, “Operating System Concepts”, 9th Edition, John Wiley and Sons Inc., 2012.

REFERENCES:

1. William Stallings, “Operating Systems – Internals and Design Principles”, 7th Edition, Prentice Hall, 2011.
2. Andrew S. Tanenbaum, “Modern Operating Systems”, Second Edition, Addison Wesley, 2001.
3. Charles Crowley, “Operating Systems: A Design-Oriented Approach”, Tata McGraw Hill Education”, 1996.
4. D M Dhamdhere, “Operating Systems: A Concept-Based Approach”, Second Edition, Tata McGraw-Hill Education, 2007.
5. <http://nptel.ac.in/>.

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