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	**:**	**2015-2019**
SEMESTER	**:**	**IV (2016-17: EVEN)**
NAME OF THE STAFF	**:**	**J. BHUVANA & S.RAJALAKSHMI**

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, Interupts 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	**T**	**1**		
24.		Tutorial on page replacement algorithms		**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		**1**		
29.		File system Storage, File concepts		**1**		
30.		Directory and Disk structure	**T**	**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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