

SWARNANDHRA
COLLEGE OF ENGINEERING AND TECHNOLOGY
(AUTONOMOUS)
 SEETHARAMPURAM, NARSAPUR-534280, WG- DT, AP
DEPARTMENT OF MASTER OF COMPUTER APPLICATIONS

TEACHING PLAN

Course Code	Course Title	Year / Sem.	Branch	Contact Hr./ week	Academic Year	Date of Commencement of Semester
20MC1T04	Operating Systems	I/I	MCA	6	2024-25	26.08.2024

COURSE OUTCOMES: Upon the successful completion of this course the student will be able

1. Understand the basics of operating systems like kernel, Shell, types and views of operating systems (K2)
2. Understand CPU scheduling algorithms and compare the results using Gantt chart. (K5)
3. Explain various memory management techniques and Concept of thrashing (K2).
4. Apply disk scheduling algorithms for better utilization of external memory (K3).
5. Understand the architecture of UNIX operating system (K1).

Unit	OUTOCME Blooms Level	TOPIC/ACTIVITY	Text Book	Contact HOURS	Delivery Method	
I	Understand the basics of operating systems like kernel, Shell, types and views of	UNIT-I				Chalk & Board, PPT
		1.1	Types of Operating Systems	T1	1	
		1.2	Operating Systems Concepts	T1	1	
		1.3	Operating System Operations	T1	1	
		1.4	Operating Systems Structures	T1	1	
		1.5	Operating System Services	T1	1	

	operating systems (K2)	1.6	User Operating-System Interface	T1	1			
		1.7	Introduction to System calls	T1	1			
		1.8	Types of System Calls	T1	1			
II	Understand CPU scheduling algorithms and compare the results using Gantt chart.(K5)	UNIT - II					Chalk & Board PPT, Video	
		2.1	Process concept	T1	1			
		2.2	Process State Diagram	T1	1			
		2.3	Process control block	T1	1			
		2.4	Process Scheduling	T1	1			
		2.5	Threads- Threading Issues	T1	1			
		2.6	Scheduling- Basic Concepts	T1	1			
		2.7	Scheduling Criteria	T1	1			
		2.8	Scheduling Algorithms	T1	2			
III	Explain various memory management techniques and Concept of thrashing (K2).	UNIT - III					Chalk & Board PPT Demonstration	
		3.1	The Critical-Section Problem,	T1	1			
		3.2	Peterson's Solution	T1	1			
		3.3	Synchronization Hardware	T1	1			
		3.4	Semaphores	T1	1			
		3.5	Classic Problems of Synchronization	T1	2			
		3.6	Monitors	T1	1			
		Mid I Exam						
		3.7	Principles of deadlock: System Model	T1	1			
		3.8	Deadlock characterization	T1	1			
		3.9	Deadlock handling	T1	1			
		3.10	Deadlock Prevention	T1	1			
		3.11	Detection and Avoidance	T1	1			
		3.12	Recovery Starvation	T1	1			
3.13	Critical Regions form Deadlock	T1	1					
		UNIT - IV						
		4.1	Memory Management: Swapping	T1	1			
		4.2	Contiguous Memory Allocation	T1	1			
		4.3	Paging	T1	1			

IV	Apply disk scheduling algorithms for better Utilization of external memory (K3).	4.4	structure of the Page Table	T1	1	Chalk & Board PPT, Demonstration
			Segmentation Virtual Memory Management-	T1	1	
		4.5	Demand Paging	T1	1	
		4.6	Page-Replacement Algorithms	T1	2	
		4.7	Thrashing	T1	1	
		4.8	File-System Interface: File Concept	T1	1	
		4.9	Access Methods	T1	1	
		4.10	Directory structure	T1	1	
		4.11	File-System mounting	T1	1	
		4.12	Files Sharing, Protection	T1	1	
		4.13	File-System implementation	T1	1	
		4.14	File-System Structure	T1	1	
		4.15	Allocation Methods	T1	1	
		4.16	Free-Space Management	T1	1	
		4.17	Disk Structure	T1	1	
4.18	Disk Scheduling	T1	1			
UNIT - V						
	Understand the	5.1	Linux System: Design Principles	T1	1	
		5.2	kernel Modules	T1	1	
		5.3	Process Management	T1	1	
		5.4	File Systems	T1	1	
		5.5	Input and Output	T1	1	
		5.6	Interprocess Communication	T1	1	
		5.7	Network Structure	T1	1	
		5.8	Security	T1	1	

v	architecture of UNIX operating system (K1).	5.9	Windows7: Design Principles	T1	1	Chalk & Board PPT
		5.10	System Components	T1	1	
		5.11	Terminal Services and Fast User	T1	1	
		5.12	File System	T1	1	
		5.13	Networking	T1	1	
		5.14	Programmer Interface	T1	1	
		MID EXAM 2				
TOTAL CLASSES					65	

Recommended Text Books for Reading:

Text Books:

1. Abraham Silberschatz, Peter Baer Galvin, Greg Gagne, Operating system concepts, Edition 9, John Wiley & Sons, Inc., 2011
2. M. G. Venkatesh Murthy, Introduction to UNIX and Shell Programming, , Pearson, 2005
3. B.M. Harwani , UNIX & Shell Programming , OXFORD University Press, 2013

Reference Books:

1. W. Richard Stevens, Stephen Rago ,Advanced Programming in the UNIX Environment , , Wesley Professional, 2013
2. W. Richard Stevens,UNIX Network Programming , 1990
3. William stallings,,Operating systems, PHI/Pearson, 6/E, 2009
4. Dietal, Pearson ,Operating systems, Dietal, 3/e, 2007
5. Dhamdhare ,Operating systems, TMH, 2/e, 2009
6. B.M. Harwani,,UNIX & Shell Programming ,OXFORD University Press, 2013

Web Reference:

https://onlinecourses.swyam2.ac.in/cec20_cs06/preview


Faculty


Head of the Department


Principal