

SWARNANDHRA
COLLEGE OF ENGINEERING & TECHNOLOGY (Autonomous)
SEETHARAMAPURAM, NARSAPUR-534280 W.G.DT. AP

DEPARTMENT OF BACHELOR OF COMPUTER APPLICATIONS(Honours)

TEACHING PLAN

Course Code	Course Title	Year/Sem	Branch	Contact hr/week	Academic Year
24BC3T01	Operating System	II/I	BCA(Honours)	6	2026-2027

Course Objectives:

The main objectives of the course is to make student:

- Understand the basic concepts and principles of operating systems, including process management, memory management, file systems, and Protection.
- Make use of process scheduling algorithms and synchronization techniques to achieve better performance of a computer system.
- Illustrate different conditions for deadlock and their possible solutions.

Course Outcomes (Cos): At the end of the course, student will able to

CO No :	Course Outcome	Knowledge Level(K)
CO1	Understand the fundamental concepts and types of Operating Systems, their structure, services, and the role of system calls.	K1
CO2	Explain and analyze the process management concepts including process states, scheduling algorithms, and inter process communication.	K3
CO3	Demonstrate knowledge of memory management techniques such as paging, virtual memory, and page replacement algorithms.	K2
CO4	Apply synchronization techniques and evaluate solutions to concurrency issues, including deadlock detection and recovery strategies.	K4
CO5	Understand file system structures, access methods, and evaluate file system implementation techniques including allocation and disk scheduling.	K3

Week No	Outcome	Blooms Level	Topic / Activity		Text Books	Contact Hours	Delivery Method
UNIT-I							
1,2	Understand the fundamental concepts and types of Operating Systems, their structure, services, and the role of system calls.	K1	1.1	Introduction to Operating System Concepts	T1	2	Chalk & Board, PPT , Interactive Whiteboard ing
			1.2	Types of operating systems,	T1	1	
			1.3	operating systems concepts	T1	1	
			1.4	Evaluation of operating systems,	T1	1	
			1.5	operating systems services	T1	1	
			1.6	structure of OS	T1	1	
			1.7	Introduction to System call	T1	1	
			1.8	System call types.	T1	2	
				TOTAL	10		
UNIT-II							
3,4	Explain and analyze the process management concepts including process states, scheduling algorithms, and inter process communication.	K3	2.1	Process concept	T1	1	Chalk & Board, PPT , Interactive Whiteboard ing
			2.2	Process Management	T1	1	
			2.3	Process State Diagram	T1	1	
			2.4	Process control block	T1	1	
			2.5	Process Scheduling: Scheduling Queues	T1	1	
			2.6	Schedulers	T1	1	
			2.7	Operations on Processes	T1	1	
			2.8	Interprocess Communication	T1	1	
			2.9	Threading Issues	T1	1	
			2.10	Scheduling-Basic Concepts	T1	1	
			2.11	Scheduling	T1	1	

				Criteria,			
			2.12	Scheduling Algorithms	T1	1	
				TOTAL		12	

Mid I Exam

UNIT-III

5, 6	Demonstrate knowledge of memory management techniques such as paging, virtual memory, and page replacement algorithms.	K2	3.1	Memory Management	T1	1	Chalk & Board, PPT , Interactive Whiteboard ing
			3.2	Swapping	T1	1	
			3.3	Contiguous Memory Allocation	T1	1	
			3.4	Paging	T1	2	
			3.5	structure of the Page Table	T1	2	
			3.6	Virtual Memory Management	T1	2	
			3.7	Demand Paging	T1	1	
			3.8	Page-Replacement Algorithms	T1	2	
				TOTAL		12	

UNIT-IV

7,8	Apply synchronization techniques and evaluate solutions to concurrency issues, including deadlock detection and recovery strategies.	K4	4.1	Process Synchronization	T1	1	Chalk & Board, PPT , Interactive Whiteboard ing
			4.2	The Critical-Section Problem	T1	2	
			4.3	Synchronization Hardware	T1	1	
			4.4	Semaphores	T1	2	
			4.5	Classic Problems of Synchronization	T1	1	
			4.6	Monitors	T1	1	
			4.7	Synchronization examples Principles of deadlock	T1	1	
				System Model	T1	1	
			4.8	Deadlock	T1	1	

			Characterization				
		4.9	Deadlock Prevention	T1	1		
		4.10	Detection and Avoidance	T1	1		
		4.11	Recovery form Deadlock	T1	1		
			TOTAL		14		
UNIT-V							
Understand file system structures, access methods, and evaluate file system implementation techniques including allocation and disk scheduling.	K3	5.1	Concept of a file	T1	1	Chalk & Board, PPT , Interactive Whiteboard ing	
		5.2	Access Methods	T1	1		
		5.3	Directory structure	T1	1		
		5.4	File system mounting	T1	1		
		5.5	file sharing	T1	1		
		5.6	protection	T1	1		
		5.7	File System Implementation	T1	1		
		5.8	File system structure	T1	1		
		5.9	allocation methods	T1	2		
		5.10	Disk scheduling.	T1	3		
		TOTAL		13			
Mid II Exam							
al No. of Classes						62	

Recommended Text Books for Reading:

Text No.	Author(s)	Title	Edition	Publisher	Year of Publication
T1	Abraham Silberschatz, Peter Baer Galvin, Greg Gagne	Operating System Concepts	9th Edition	John Wiley & Sons Inc.	2012
T2	William Stallings	Operating Systems – Internals and Design Principles	7th Edition	Prentice Hall	2011

R. Sunita
Faculty


Head of the Department


Principle