



C. U. SHAH UNIVERSITY

FACULTY OF: Computer Science
DEPARTMENT OF: M.Sc(CA & IT)
SEMESTER : III
CODE: 4CS03AOS1
NAME: Advanced Operating System

Sr · No	Subject Code	Subject Name	Teaching Hours/Week				Credits	Evaluation Scheme/Semester						Total Marks
			T H	T U	P R	TOTA L		Theory			Practical			
								Sessional Exam	Univer sity Exam	Sessional Exam	University Exam			
								Mar ks	Hr s	Marks	Mar ks	Hr s	Total Marks	
1	4CS02AOS1	Advanced Operating System	4	0	0	4	4	30	1.5	70	50	1.5	50	150

Objectives:-

- Help students become familiar with the fundamental concepts of operating system.
- Help students become competent in recognizing operating systems features and issues.
- Provide students with sufficient understanding of operating system design and how it impacts application systems design and performance.

Sr.No	Course Contents	Total Hrs.
1	Computer and Operating System Overview. Computer system organization and Architecture, Evolution of operating system, Operating system structure and operations overview of Process, Memory, I/O , Storage	10
2	Processes Process states, PCB(Process Control Block), Operation on process, Process Scheduling, IPC (Inter Process Communication),Examples of IPC System Thread Overview, Multithreading model	12
3	File Management Overview, Access Methods, Directory structure, File System Mounting File Sharing, Protection	10
4	Memory Management Memory Partitioning ,Swapping, Continuous Memory allocation, Paging, Segmentation, Virtual memory management System: Demand paging, copy on write, Page Replacement	10



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5	Scheduling Types of Scheduling Scheduling Algorithm , Unix scheduling Multiprocessor Scheduling Linux Scheduling	7
6	I/O Management and Disk Scheduling I/O Devices, Organization of the I/O Function, OS Design Issues, I/O Buffering, Disk Scheduling, RAID Structure, Disk cache, UNIX I/O.	8

Learning Outcomes:

- He/She should be able to understand the concepts of Operating System.
- He/She should be aware of operating system failure or know error.
- He/She should be able to solve problems of application errors due to Operation of function and define base architecture in terms of OS fundamentals.

Teaching & Learning Methodology:

- The module will be delivered via lectures (by teaching aids i.e. Projectors PPT and PDF's) and assignments.

Students are also expected to undertake self-study during this course.

Books Recommended:

1. Operating System Principles, **A. Silberschats, Peter Galvin, Greg Gagne**, WILEY-India 7th Edition.
2. Operating Systems, **William Stallings**, Pearson 6th Edition.
3. Operating Systems, **Achyut Godbole**, Tata McGraw- Hill.
4. Unix Systems Programming : Communication, Concurrency and Threads, **Kay Robbins**, 2-
Edition, Pearson
Education
5. Unix concepts and applications, **Sumitabha Das**, TMH Publications.
6. Unix programming, **Stevens**, Pearson Education.