II YEAR SEM-1 B.Tech CSE	CORE	L	T	P	C
CODE:CS2102	OPERATING SYSTEM	2	2	0	4

UNIT – I

Basics: Evaluation, definition, Operating System Functionalities, Types of Operating Systems, Computer Architecture support to Operating Systems: Kernel and user mode. Introduction to Systems calls.

UNIT – II

Process Management: definition: Process and PCB, description, Life cycle, Process Scheduling: Preemptive and Non-Preemptive; (Round Robin, FIFO, SJF and priority based) Uniprocessor scheduling algorithms, Multiprocessor and Real-time scheduling algorithms

UNIT – III

Process Synchronization - Peterson's Solution, Baker's Algorithm, Hardware Support to Process Synchronization, Semaphores, Critical Regions: Producer-consumer problems, Readers writers problem, dining Philosophers problem. Monitors

UNIT- IV

Inroduction to deadlockes, Resourse allocations, DAGs, Dead lock Conditions, Deadlock prevention, Deadlock Detection- safe and unsafe states, deadlock avoidance- Banker's algorithms, and Recovey,

UNIT-V

Memory Management: Partioning, Paging and Segmentation and space allocation; Page replacement algorithms, Analysis of page allocation policies - Working Set, Virtual memory, Demand Paging

UNIT – V I

File Systemsand Secondary storage management: : Free space management: Contiguous, Sequential and Indexed Allocation, File system interface, File System implementation, Disk Scheduling, Device drivers - block and character devices, streams, Character and Block device switch tables; Protection and Security

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Reference Books

1. Abraham Silberschatz, Peter Baer Galvin, Greg Gagne, John Wiley & Sons Inc. Operating System Concepts - Operating System Concepts, Sixth Edition,
2. William Stallings (4th edition)Operating System: Internals and Design Principles

Text Books

1. Andrew S Tanenbaum, Prentice Hall Modern Operating Systems
2. Andrew S Tanenbaum, Prentice Hall Modern Operating Systems
3. .Systmes D M Dhamdhere, tataMcGraw Hill Operating Systems - System Programming and Operating
4. Gary Nutt, Addison Wesley -Operating Systems: A Modern Perspective
5. S Godbole, Tata McGraw Hill Operating Systems - Operating Systems
6. Maurice Bach, Prentice Hall -Design of the Unix Operating System
7. Advance Linux Programming by Richard Stevens, William Stallings/Galvin