4-YEAR B. TECH.
IN
COMPUTER SCIENCE & ENGINEERING

V SEMESTER B. TECH - CSE					
Course No.	**Name of the Courses**	**L**	**T**	**P**	**Credit Hrs.**
CSC15101	Computer Architecture	3	1	0	7
CSC15102	Operating Systems	3	1	0	7
CSC15103	Theory of Computation	3	2	0	8
CSC15104	Combinatorics and Graph Theory	3	1	0	7
CSC15105	Software Engineering	3	1	0	7
CSC15202	Operating Systems Lab	0	0	3	3
CSC15205	Software Engineering Lab	0	0	3	3
Total		**15**	**5**	**6**	**41**
Contact Hrs.					

CSC15102	**Operating Systems**	**3-1-0**

Introduction to Operating System: Introduction, Categories of OS, Computer System Architecture, Interrupts, Storage Structure, Hardware Protection.
Operating System Structures: OS Structure, OS Components, OS Services, System Calls, System Structures, Virtual Machines, System Design Goal, SYSGEN.
Process Management: Process Concept, Process Sate, PCB, Process Scheduling, Schedulers, Process Creation, Process Termination, Co-operating Process, Producer Consumer Problem, Inter-process Communication, Client Server Communication, Threads, Process Synchronization, Critical Section Problem, Bakery Algorithms, Semaphores, Reader's Writer's Problem, Dining Philosopher's Problem.
CPU Scheduling: CPU Scheduler, Scheduling Criteria, Scheduling Algorithms: FCFS, SJF, Priority Scheduling, Round Robin Scheduling, Multilevel Queue Scheduling, Multilevel Feedback Queue Scheduling.
Deadlock: Introduction, Deadlock Prevention, Deadlock Avoidance, Resource Allocation Graph Algorithms, Deadlock Detection, Prevention and Recovery.
Memory Management: Memory Hierarchy, Memory Types, Main Memory Architecture, Cache Memory, Address Binding, Dynamic Loading, Linking, Overlays, Logical Vs Physical Addresses, Swapping, Contiguous Memory allocation, Fragmentation, Segmentation, Virtual Memory, Paging, Demand Paging, Page Replacement Algorithms, Thrashing.
Secondary Storage Structure: Disk Structure, Disk Scheduling, Disk Management, Swap Space Management, Stable Storage Implementation.
File System Implementation: File System Interface, File System & Directory Structure, Implementation of File System & Directory, Allocation Methods, Free Space Management.