Semester	**3**
Paper Code	**C2CS230322T / C2CS230322P**
Course	**MAJOR**
Paper Title	**OPERATING SYSTEM**
No. of Credits	**4**
Theory/ Practical / Composite	**Composite**
Minimum No. of preparatory hours per week a student has to devote	5
Number of Modules	One
Syllabus	1. Introduction to OS, Functions of OS, Types of Operating systems, OS for different machines, interrupt driven Program, concurrent processing, multiprogramming, batch processing, time sharing. 2. Operating System Organization - Processor and user modes, kernels, system calls and introduction to system programs, IPC, RPC. 3. Process - view of the process and resources, process abstraction, process hierarchy, threads. Process Scheduling, non-pre-emptive and pre-emptive scheduling algorithms. 4. Concurrent processes critical section, semaphores, critical problems, deadlocks. 5. Memory Management Physical and virtual address space; memory allocation strategies –fixed and variable partitions, virtual memory, Paging, segmentation 6. File and I/O Management Directory structure, file operations, file allocation methods, disk scheduling algorithms 7. Introduction to Protection and Security, Authentication, Internal access Authorization
Learning Outcomes	On completion of the course, the students will be able to: 1. To understand the services provided by and the design of an operating system along with the structure and organization of the file system. 2. To understand a processes and their synchronization and scheduling. 3. To understand different approaches to memory management. 4. Students should be able to use system calls for managing processes, memory and the file system. 5. Students should understand the data structures and algorithms used to implement an OS. 6. At the end of this course the students will demonstrate a knowledge of process control, threads, concurrency, memory management scheduling, I/O and files, distributed systems, security

Reading/Reference Lists	1. A Silberschatz, P.B. Galvin, G. Gagne, Operating Systems Concepts, 8th Edition, John Wiley Publications 2008. 2. A.S. Tanenbaum, Modern Operating Systems, 3rd Edition, Pearson Education 2007. 3. G. Nutt, Operating Systems: A Modern Perspective, 2nd Edition Pearson Education 1997. 4. W. Stallings, Operating Systems, Internals & Design Principles , 5th Edition, Prentice Hall of India. 2008	
Evaluation	Theory CIA: 12 Attendance: 3 Semester Exam: 45	Practical CA: 38 Attendance: 2
Paper Structure for Theory Semester Exam	Answer 3 out of 5 of 15 marks each	