

1.	Title of the course	Operating Systems
2.	Course number	CS305L
3.	Structure of credits	3-0-0-3
4.	Offered to	UG
5.	New course/modification to	Modification To CS3107/8
6.	To be offered by	Department of Computer Science and Engineering
7.	To take effect from	July 2022
8.	Prerequisite	Nil
9.	Course Objective(s): To teach the fundamental concepts of modern operating systems on the broad perspectives of process, memory, and storage management.	
10.	Course Content: Introduction: Review of computer organization, history of operating systems; Process management: Concepts of threads and processes, processor scheduling (including multicore architectures); Process synchronisation: Semaphores, monitors, mutual exclusion, and priority inversion; Deadlocks: Deadlock characterization, prevention, and avoidance; Memory management: Swapping, paging, segmentation, virtual memory management (demand paging), page replacement, and frame allocation; Storage management: File concepts, file system implementation, disk scheduling and management, redundant array independent disks, Input/Output (I/O) hardware overview, application I/O interface, and kernel I/O subsystems; Introduction to secure operating systems	
11.	Textbook(s): 1. Comer D, <i>Operating System Design: The XINU Approach</i> , CRC (2015). 2. Silberschatz A, Galvin P and Gagne G, <i>Operating System Concepts with Java</i> , John Wiley and Sons (2018).	
12.	Reference(s): 1. Deitel H and Deitel P, <i>Operating Systems</i> , Pearson (2013).	