

Title	Operating Systems
Code	CMP-421
Credit Hours	3
Category	Computing
Prerequisite	None
Co-Requisite	None
Follow-up	None
Course Description	Operating systems basics, system calls, process concept and scheduling, inter-process communication, multithreaded programming, multithreading models, threading issues, process scheduling algorithms, thread scheduling, multiple-processor scheduling, synchronization, critical section, synchronization hardware, synchronization problems, deadlocks, detecting and recovering from deadlocks, memory management, swapping, contiguous memory allocation, segmentation & paging, virtual memory management, demand paging, thrashing, memory-mapped files, file systems, file concept, directory and disk structure, directory implementation, free space management, disk structure and scheduling, swap space management, system protection, virtual machines, operating system security
Text Book(s)	A. Silberschatz, P. B. Galvin, G. Gagne, Operating Systems Concepts, 9 th Edition, Wiley, 2012, ISBN: 1118063333.
Reference Material	Andrew S. Tanenbaum, Herbert Bos, Modern Operating Systems, 4 th Edition, Pearson, 2014, ISBN: 013359162X. William Stallings, Operating Systems: Internals and Design Principles, 9 th Edition, Pearson, 2017, ISBN: 0134670957.