

<b>Course Title</b>	<b>Operating Systems</b>
<b>Course Code</b>	<b>CC-311</b>
<b>Credit Hours</b>	3
<b>Category</b>	Computing Core
<b>Prerequisite</b>	Data Structures and Algorithms
<b>Co-Requisite</b>	None
<b>Follow-up</b>	None
<b>Course Description</b>	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
<b>Text Book(s)</b>	A. Silberschatz, P. B. Galvin, G. Gagne, Operating Systems Concepts, 9 <sup>th</sup> Edition, Wiley, 2012, ISBN: 1118063333.
<b>Reference Material</b>	Andrew S. Tanenbaum, Herbert Bos, Modern Operating Systems, 4th Edition, Pearson, 2014, ISBN: 013359162X. William Stallings, Operating Systems: Internals and Design Principles, 9th Edition, Pearson, 2017, ISBN: 0134670957.