

SU DEPARTMENT OF MATHEMATICS & COMPUTER SCIENCE
SYLLABUS (Tentative)
COSC 450/550 Operating Systems

Description: Understanding the role and purpose of the operating system, functionality of a typical operating system and algorithms employed by operating systems. (Three hours lecture per week)

Prerequisite: COSC 350.

Text: “Modern Operating Systems,” by Andrew Tanenbaum; Prentice Hall Publishing, 4th Edition 2015.

	Weeks
<i>Introduction</i>	1.0
Overview of OS concepts, History of OS, Using the OS, OS and computer hardware Organization.	
<i>Process Management</i>	2.5
Concept of a Process, Interprocess communication, Process scheduling and synchronization, Thread, Implementation of Threads.	
<i>Memory Management</i>	2.5
Basic concept of Memory Management, Swaping, Virtual Memory, Paging Page Replacement Algorithms, Segmentation, Segmentation with Paging	
<i>File Management</i>	2.0
Introduction to File Systems, Files and Directories, File System Implementation	
<i>Input /Output</i>	2.0
Principle of I/O Hardware, I/O Software Layers, Disks, Clocks	
<i>Deadlock</i>	1.0
Introduction to Deadlock, Deadlock Detection and Recovery, Deadlock Avoidance, Deadlock Prevention, Other Issues	
<i>Multimedia Operating System</i>	2.0
Introduction to Multimedia, Multimedia Files, Video Compression, Multimedia Process Scheduling, File Placement	
<i>Optional Topics</i>	
Introduction to Computer Securities	
<i>Test</i>	1.0

	14.0

EVALUATION

Tests, Quizzes & Final Exam: 70%
Homework, Project: 30%