

SARDAR PATEL UNIVERSITY
Programme & Subject : B.Sc (CA & IT) – M.Sc (CA & IT) Dual Degree
US03CIIT27 : Operating Systems Semester – 3
(w.e.f June 2020)

Credits : 4

Exam Duration : 3hrs

Lectures per week : 4

All units carry equal weightage.

Unit	Description in detail	Weighting (%)
I	Introduction and Scheduling <ul style="list-style-type: none"> ➤ Introduction to Operating System, Operating System Services, ➤ Different types of Operating Systems: Real time, Time sharing, Distributed and Multiprogramming. ➤ OS Structure – Simple Structure, Layered Approach, Microkernel. ➤ CPU Scheduling: Introduction to process, process control block, process scheduling ➤ FCFS Scheduling, SJF scheduling, Priority scheduling, Round Robin scheduling 	25%
II	Memory Management <ul style="list-style-type: none"> ➤ Memory Management: Concept, Basic memory management techniques: ➤ Swapping, Demand Paging 1) The Optimal Page Replacement Algorithm 2) The LRU Page Replacement Algorithm 3) The FIFO Page Replacement Algorithm 	25%
III	Process Synchronization, Deadlocks and Introduction to Linux <ul style="list-style-type: none"> ➤ Introduction to Cooperating process ➤ Process Synchronization, ➤ Critical Section Problem ➤ Two process solution ➤ Deadlock and characterization ➤ Introduction to Linux System ➤ Features of Linux 	25%
IV	Basic Linux commands <ul style="list-style-type: none"> ➤ Basic Commands: login, logout, date, man, pwd, who, dir, ls, cd, mkdir, rmdir, wc, echo ➤ Use of Wild card characters ➤ Types of FAP, use of chmod command ➤ Basic commands like cp, mv, rm, rev, file redirection, grep, cut, paste, find sort commands with example ➤ Introduction to shell script: execution of it, shell script variable, expr, test commands ➤ Control structure: if, if..else, case structure ➤ Iteration: while, for construct, break, continue, exit commands 	25%

Basic Text & Reference Books :-

1. Andrew S. Tanenbaum: Operating System design & Implementation, Prentice Hall International
2. James Peterson and Abraham Silberschatz: Operating System Concept, Addison Wesley
3. Bryan Pfaffenberger - Linux Commands Instant reference , BPB Publication
4. Sumitabha Das - UNIX , Concepts and Applications – Tata McGraw-Hill Publications
5. Advanced Linux Programming – Samuel, Techmedia Publications