

# SARDAR PATEL UNIVERSITY

Programme & Subject : B.Sc (CA & IT) – M.Sc (CA & IT) Dual Degree

PS03CIIT27 : Operating Systems Semester – 3

(w.e.f June 2019)

Credits : 4

Exam Duration : 3hrs

Lectures per week : 4

All units carry equal weightage.

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