GUJARAT TECHNOLOGICAL UNIVERSITY
DIPLOMA IN COMPUTER ENGINEERING
Semester: 4

Subject Name   OPERATING SYSTEM

Sr. No.	Course content
1.	**Introduction** Operating System Concept OS Services Types of Operating Systems Batch Operating System Multiprogramming Multiuser Multiprocessing Distributed Operating System Network Operating System Multithreading Operating System
2.	**Booting process of Windows XP**
3.	**Process Management** Process Concept : Definition, Process States, Process Control Box Process Scheduling Types of Schedulers : Long-term, Medium-term, Short-term Scheduling criteria and performance Scheduling algorithms : FCFS, SRTN, SJN, RR, Priority based preemptive, MLQ Interprocess communication and synchronization Concept and need for interprocess synchronization Mutual Exclusion : Concept and Solution with Semaphore Deadlock Concept Necessary conditions for deadlock to occur
4.	**Memory Management** Single Process Monitor Partitioned Memory allocation : Static, Dynamic Paging Segmentation Virtual Memory

5.	**File and Disk Management** File and Directory Concept Disk Organization Disk Allocation Methods : Contiguous, Noncontiguous Disk Scheduling : FCFS, SSTF, SCAN
6.	**UNIX** • Overview Features, Components, File Types and Access, Permission, Disk Structure of root, Structure of File System • Commands General Purpose : banner, cal, date, who, tty, uname, passwd, be, echo, ps, kill Navigating File System : pwd, cd, mkdir, rmdir, ls File Handling : cat, cp, rm, mv, more, lp, file, wc, split cmp, comm., diff, head, tail, grep, sort, cut, paste, nl, tr, chmod, chown, chgrp Pipelining, Redirection, Tees and Shell Variables Shell environment and programming The if statement, the case statement, looping with for, while and until statements
7.	**LABORATORY EXERCISES** Shell Commands and programming

Reference Books:

1. Unix Concepts And Application   Sumitabha Da

2. Operating Systems   Milan Milenkovic

3. Operating System Concepts   James Peterson Wesley
         Abraham Silberschatz

4. Introduction to Unix & Shell Programming   Venkateshmurthy
Pearson