

# GUJARAT TECHNOLOGICAL UNIVERSITY

## DIPLOMA IN INFORMATION TECHNOLOGY

### Semester: 4

Subject Name    **OPERATING SYSTEM**

Sr.No	Course content
1.	<b>Introduction</b> 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.	<b>Booting process of Windows XP</b>
3.	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.	<b>Memory Management</b> Single Process Monitor Partitioned Memory allocation : Static, Dynamic Paging Segmentation Virtual Memory
5.	<b>File and Disk Management</b> File and Directory Concept Disk Organization Disk Allocation Methods : Contiguous, Noncontiguous Disk Scheduling : FCFS, SSTF, SCAN
6.	<b>UNIX</b> Overview Features, Components, File Types and Access, Permission, Disk Structure of root,

	<p>Structure of File System</p> <p>Commands</p> <p>General Purpose : banner, cal, date, who, tty, uname, passwd, be, echo, ps, kill</p> <p>Navigating File System : pwd, cd, mkdir, rmdir, ls</p> <p>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</p> <p>Pipelining, Redirection, Tees and Shell Variables</p> <p>Shell environment and programming</p> <p>The if statement, the case statement, looping with for, while and until statements</p>
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## **LABORATORY EXERCISES**

Shell Commands and programming

## **Reference Books:**

1 Unix Concepts And Application Sumitabha Das MGH

2.Operating System Milan Milenkovic MGH

3 Operating System Concepts James Peterson Wesley  
Abraham Silberschatz

4. Operating System Andrew Tanenbaum