Parul® University

Course: BTech   **Semester:** 4

Prerequisite: Data Structures and Algorithms, Good working knowledge of C, and Fundamentals of Computer Systems.

Rationale: This course is an introduction to the theory and practice behind modern computer operating systems. Topics will include what an operating system does (and doesn't) do, system calls and interfaces, processes, concurrent programming, resource scheduling and management, virtual memory, deadlocks, and algorithms, programming, and security. We will approach the subject from both a theoretical perspective as well as a practical one

Teaching and Examination Scheme

Teaching Scheme					Examination Scheme					Total
Lecture Hrs/Week	Tutorial Hrs/Week	Lab Hrs/Week	Hrs/Week	Credit	Internal Marks			External Marks		
					T	CE	P	T	P	
0	0	2	0	1	-	-	20	-	30	50

SEE - Semester End Examination, **CIA** - Continuous Internal Assessment (It consists of Assignments/Seminars/Presentations/MCQ Tests, etc.)

Course Outcome

After Learning the Course the students shall be able to:

1. Experiment with Linux commands and shell programming.
2. Able to build shell program for process and file system management with system calls.
3. Able to implement and analyse the performance of CPU scheduling algorithm.
4. Able to implement and analyse the performance of page replacement algorithms.
5. Able to implement and analyse the performance of deadlock avoidance and detection algorithm.

List of Practical

1.	Study of Basic commands of Linux.
2.	Study the basics of shell programming.
3.	Write a Shell script to print given numbers sum of all digits.
4.	Write a shell script to validate the entered date. (eg. Date format is: dd-mm-yyyy).
5.	Write a shell script to check entered string is palindrome or not.
6.	Write a Shell script to say Good morning/Afternoon/Evening as you log in to system.
7.	Write a C program to create a child process.
8.	Finding out biggest number from given three numbers supplied as command line arguments.
9.	Printing the patterns using for loop.
10.	Shell script to determine whether given file exist or not.
11.	Write a program for process creation using C. (Use of gcc compiler.
12.	Implementation of FCFS &Round Robin Algorithm.
13.	Implementation of Banker's Algorithm.