

NIRMA UNIVERSITY

Institute:	Institute of Technology
Name of Programme:	Integrated B.Tech.(CSE)-MBA
Course Code:	CSI0606
Course Title:	Linux Fundamentals
Course Type:	Core
Year of Introduction:	2021-22

Credit Scheme

L	T	Practical Component				C
		LPW	PW	W	S	
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Course Learning Outcomes (CLO):

At the end of the course, students will be able to –

1. utilize various of Linux utilities effectively
2. demonstrate use of shell scripts to the given solve problems
3. implement some standard Linux utilities like grep fork etc. in C language

Syllabus: Laboratory work will be conducted based on the following topics with minimum 7 experiments to be conducted:

Introduction to Linux, Types of shells, Basic command of Linux, Study of Editors, Files & directory commands – cat, less, more, ls, comm, diff, tar, Pipes & redirection- use of !, &, >, touch, absolute & relative paths. Directory related commands – pwd, cd, mkdir, rmdir, Manipulating file commands - cp, mv, rm, grep, chmod etc.

Shell programing based on Shell variables, Arithmetic operators, Decision making instructions, Logical operators, Case control structures, Loop control structures, head command, tail command, Concatenation of two files, Directory Management, Scripts for basic function of DBMS, System calls: Fork, exec. etc.

Self-Study: -NA-

- Suggested Readings/
References:
1. Sumitabha Das, “UNIX: Concepts and Applications” Tata McGraw Hill (Latest Edition)
 2. Yashvant Kanetkar, Shell Programming, BPB.
 3. Kernighan, the UNIX Programming Environment, Pearson
 4. Maurice Bach, The Unix Operating System, Prentice Hall

Suggested List of Experiments:	Sr. No.	Title	Hours
	1	To get acquaintance with basic UNIX commands like man, who, cat, cd, cp, ps, ls, mv, rm, mkdir, rmdir, echo, more, date, time, kill, history, chmod, chown, finger, pwd, cal, logout, shutdown, grep etc.	04
	2	To get acquaintance with UNIX filters To write a shell script for performing the functions of a basic calculator. (Using decision making, case control structure and bc command)	04
	3	To write a shell script to compare the contents of two files To write a shell script to generate all the combinations of 1, 2 and 3	04
	4	To write a shell script to keep on accepting lines of text and write the text into a data file until the user inputs "end". The script should count the number of lines input and display them To write a shell script to print the reverse of an input number	04
	5	To write a shell script which imitates head command To write a shell script which imitates tail command	04
	6	To write a shell script to generate the series of number multiply by 2 To write a shell script to concatenate all given file into a single file	04
	7	To write a shell script for implementing directory management	04
	8	To write a shell script for performing basic functions related to DBMS	04
	9	To write a shell script to find factorial of a given integer To write a Shell script to print the command line arguments in reverse order	04
	10	To write a C program to implement grep command To write a C program to implement a system call using the fork () and Exec () function	04

Suggested Case List: -NA-