C. U. SHAH UNIVERSITY, WADHWAN CITY.

Faculty of: **Computer Science**
Course: **Bachelor of Computer Applications**
Semester**: III**
Subject Code**: 4CS03ALN1 (Elective – I)**
Subject Name: **Linux Programming**

Sr. No	Branch Code	Subject Code	Subject Name	Teaching hours/ Week			Credit hours	Credit Points	Evaluation Scheme/ Semester										Total
									Theory				Practical						
				Th	Tu	Pr			Internal Assessment		End Semester Exams		Internal Assessment		End Semester Exams				
									Marks	Duration	Marks	Duration	Marks	Duration	Marks	Duration			
3	2	4CS03ALN1	Linux Programming	4	--	2	6	5	15(SE) 15(CE)	1Hr.	70	2½ Hrs.	25(IP) 25(CE)	1 Hrs.	--	--			150

AIM:

The aim of this subject is to make student how to use Linux Operating System. The students would be able to handle Linux OS and use of different commands in OS effectively. Students are familiar with the environment of the Linux OS, Commands and running Shell Script as Linux programs.

COURSE CONTENTS

Unit I Introduction   10 Hrs.
- Introduction of UNIX/LINUX.
- Types of Shell.
- Introduction to UNIX/LINUX kernel.
- History of LINUX
- LINUX features and distributions.
- Architecture of UNIX/LINUX
- Linux relationship with UNIX
- Installation steps of LINUX OS.
- Linux security.
- Ext2, Ext3 and Ext4 file system in LINUX.

Unit II Linux File System   10 Hrs.
- Types of Users in LINUX
- Power of Root User.
- Creating users using GUI in Linux
- File permissions in Linux
- Security by File permission in Linux
- File handling commands (cat, rm, cd, cp, ls, chmod, mkdir, rmdir, mv)
- Networking commands (hostname, ping, netstat, telnet, finger)
- Text Processing commands (cat, echo, echo, wc)
- General Commands (date, passwd, cal, uname, who)

Unit III Resource Management in Linux   10 Hrs.

- Introduction to System Calls
- System calls for process management.
- System calls for File management
- Introduction to signals.
- Inter Process Communication (IPC)
- Memory management in Linux (Demand paging, swapping, virtual memory)

Unit IV Shell Programming   10 Hrs.

- Introduction to vi editor
- Various vi modes, text editing in vi.
- Different Shell features.
- Shell variables.
- Writing and running shell scripts.
- Branching and looping in shell script.
- Grep command Linux.

Unit V Files   8 Hrs.

- File Concept in Linux
- File types and attributes.
- File system structure.
- What is inode?
- System calls for file system structure.

REFERENCE BOOKS:

- Complete Guide to Linux by Peter Norton. Publication : SAMS
- A Practical Guide to Linux Commands, Editors and Shell Programming By Mark G. Sobell Publication: Pearson India
- Linux : Complete reference By Richard Peterson Publication McGraw Hill India
- Linux Administration : A beginners guide By Wale Soyinka Publication :McGraw Hill India
- Linux Kernel Development By Robert Love Publication : Pearson India

NPTEL COURSE (https://nptel.ac.in/):

- **Linux Programming and Scripting, IIT Madras, Anand Iyer**
- https://nptel.ac.in/courses/117106113