



Subject Code: 09CT0512
Subject Name: Linux Administrator
Diploma Year – III (Semester V)

Objective:

To impart knowledge and skills on various practical and theoretical aspects of Linux operating system (OS) basics and Linux OS based server configuration, management and administration.

Credits Earned: 04

Course Outcomes: After completion of this course, student will be able to:

1. Understand Linux utilities to create and manage simple file processing operations and Linux boot processing.
2. Apply Command line in Linux to manage user, user groups, system management, volume management, and troubleshooting application, scheduling task and system level issue.
3. Illustrate client server applications with appropriate security.
4. Configure various services of Linux Apache web server.
5. Evaluate various shell Scripting.

Pre-requisite of course: Basic knowledge of Operating System

Teaching and Examination Scheme

Teaching Scheme (Hours)			Credits	Theory Marks			Tutorial/Practical Marks		Total Marks
Theory	Tutorial	Practical		ESE	IA	CSE	Viva	Term Work (TW)	
3	0	2	4	50	30	20	25	25	150



Contents:

S.NO	TOPIC	Hours
1	Basics of Linux: History of Linux (GNU/LINUX), Download, installs, update, and manage software packages from Red Hat and yum package repositories.	03
2	Linux Commands Pwd/cd/ls/who/whoami/who am i/which/cp/mv/rm/mkdir/touch/ hostname/ cat/cal/eject/mount/ umount/login/logout /echo/wget/Halt/shutdown/poweroff/reboot/ll/dd/joe/emacs/ln/fdisk/mke2fs/ mtools/pico/sed/wc/whereis/convert/ifconfig/ncftp/scp/hdparm/dmesg/bc/sh/at/atq/trm/date/ uptime/su/switchdesk/uname	04
3	Management of File using Command Line Introduction to BASH, Command-line shortcuts, File Types, Ownership and Permissions, File management and manipulation, Moving users & its directories, Miscellaneous Tools, Editors	05
4	Managing Users and Groups Creating and managing user/s and group commands, User management Tools, Users and Access Permissions, Updating users and group attributes, PAM (Pluggable Authentication Modules)	06
5	Creating, Viewing, and Editing Text Files Redirecting Output to a File or Program, I/O Redirection and Pipelines, Editing Text Files from the Shell Prompt, Editing Text Files with a Graphical Editor.	06
6	Booting and Shutting down Boot Loaders, The init process, rc scripts, enabling and disabling services, Booting in recovery mode	04
7	Core System Services The init Daemon, xinetd and inetd, The Logging Daemon, Configuring, Logging Daemon, The CRON program	05
8	Compiling the Linux Kernel Kernel concepts, Finding Kernel Source Code, Building the Kernel, Patching the Kernel	04
9	Apache Web Server HTTP Protocol, Installing Apache HTTP Server, Starting up and shutting down apache, Testing Apache Installation, Configuring Apache, Troubleshooting Apache	05
	Total Hours	42



Suggested Theory distribution:

The suggested theory distribution as per Bloom’s taxonomy is as per follows. This distribution serves as guidelines for teachers and students to achieve effective teaching-learning process

Distribution of Theory for course delivery and evaluation					
Remember	Understand	Apply	Analyse	Evaluate	Create
40%	40%	10%	10%	0	0

Suggested List of Experiment:

1. File Handling Commands
2. User Handling Commands
3. Group Handling Commands
4. Startup and Shutdown Commands
5. Installation and Configuration of Apache Server
6. Building and patching Linux Kernel

SUGGESTED LEARNING RESOURCES

List of Books:

1. Steve Shah and Wale Soyinka “ Linux Administration: A Beginner’s Guide”, 4th Edition, Tata McGraw-Hill Publishing Company Limited, New Delhi, ISBN: 978-0072262599
2. Susan Lauber, Philip Sweany, Rudolf Kastl and George Hacker, “REDHAT System Administration-1 Student Work book”, REDHAT Inc. 2014

Supplementary Resources:

1. https://www.tutorialspoint.com/linux_admin/index.htm
2. <https://linode.com/docs/tools-reference/linux-system-administration-basics/>
3. opensourceforu.com/2016/07/introduction-linux-system-administration/
4. <https://www.linuxfoundation.org>