

GANPAT UNIVERSITY										
FACULTY OF ENGINEERING & TECHNOLOGY										
Programme		Diploma Engineering				Branch		COMPUTR ENGINEERING		
Semester		VI				Version		1.0.0.0		
Effective from Academic Year			2020-21			Effective for the batch Admitted in			JULY 2018	
Subject code		1CE2605		Subject Name		Linux Administration				
Teaching scheme					Examination scheme (Marks)					
(Per week)	Lecture(DT)		Practical(Lab.)		Total		CE	SEE	Total	
	L	TU	P	TW						
Credit	3	0	2	0	5	Theory	40	60	100	
Hours	3	0	4	0	7	Practical	60	40	100	

Pre-requisites:
Some Basic knowledge of Operating System.

Course Learning Outcomes:
The course content should be taught and implemented with an aim to develop different skills leading to the achievement of the following competencies and course learning outcomes:
<ul style="list-style-type: none"> T1 Access the command line T2 Manage files from command line T3 Create, view, and edit text files T4 Manage local users and groups T5 Monitor and manage Linux processes T6 Control services and daemons T7 Control access to files with file system permissions T8 Configure and secure the OpenSSH service T9 Install and update software packages T10 Access Linux file systems T11 Manage Linux networking
The practical should be carried out in such a manner that students are able to acquire different learning outcomes in cognitive, psychomotor and affective domain to demonstrate course learning outcomes.

Course Content					
Name of UNIT	Unit Content		Unit Learning Outcomes	Marks	Hrs
UNIT 1 Introduction of Linux System	<ul style="list-style-type: none"> 1.1. Installation of Linux System 1.2. Linux Boot Sequence 1.3. Linux Run Level 1.4. Introduction of different shell 1.5. Access Command Line 1.6. The Linux File System Hierarchy 1.7. Managing files and directories through command line 		<ul style="list-style-type: none"> 1.A Installation of Linux Operating system 1.B Linux Boot Sequence and Run Level. 1.C Managed with Command Line. 1.D Managing the file and directories of Linux file system. 	10	6

	1.8. Getting Help through command line.			
UNIT 2 Management of User, Group, File and Directory	2.1 Users and Groups 2.2 Gaining Superuser Access 2.3 Managing Local User Accounts 2.4 Managing Local Group Accounts 2.5 Managing User Passwords 2.6 Linux File System Permissions 2.7 Managing File System Permissions from the Command Line 2.8 Managing Default Permissions and File Access 2.9 Configuring and Securing OpenSSH Service	2.a Describe user and group creation. 2.b Managing User and Groups. 2.c Set password through command line. 2.d Describe Linux file permission. 2.e File system permission with command line. 2.f Login with remote system.	12	6
UNIT 3 Administration of Processes and Service	3.1 Processes 3.2 Controlling Jobs 3.3 Killing Processes 3.4 Monitoring Process Activity 3.5 Identifying Automatically Started System Processes. 3.6 Controlling System Services. 3.7 Identify the Status of systemd 3.8 Using systemctl to Manage Services 3.9 Concept of daemon	3.a Controlling the process in linux. 3.b Schedule the job. 3.c Killing the process. 3.d Describe the process and how to managed the system services. 3.e Describe the system and systemctl.	12	10
UNIT 4 Installing and Updating Software Packages	4.1 RPM Software Packages and Yum 4.2 Managing Software Updates with yum 4.3 Enabling yum Software Repositories 4.4 Examining RPM Package Files 4.5 Installation of different software like PHP, Apache, MySQL, Java, Python.	4.a Install and manage the software though command line.	12	10
UNIT 5 Accessing Linux File Systems	5.1 Identifying File Systems and Devices 5.2 Mounting and Unmounting File Systems 5.3 Making Links Between Files 5.4 Locating Files on the System	5.a Learn the different file system and devices. 5.b Mounting and unmounting the file system. 5.c Searching and making the link in file system.	7	7

UNIT 6 Linux Networking	6.1 Network interface names 6.2 Setting IP Address 6.3 Displaying IP addresses 6.4 Nmcli command	6.a Networking with Linux. 6.b Set up and configuration IP parameter in Linux. 6.c Use of nmcli.	7	6
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List of Practical		
No.	Unit	Name of Practical
1	1	Installation of Linux Operating System.
2	1	Practical to perform various command though shell.
3	1	Demonstrate the Linux Boot Sequences.
4	1	Demonstrate how to get help in Linux command line.
5	1	Practical to change the Run Level in Linux.
6	2	Creating and managing user and group with Command line.
7	2	Managing the File permission with Command line.
8	2	Configure the Open SSH.
9	3	Practical to perform various task on processes.
10	3	Practical to show different system services.
11	3	Practical to perform the systemd and systemctl command.
12	4	Installing and managing software through command line.
13	5	Demonstrate the different File system in Linux.
14	5	Mounting and unmounting the file in Linux system
15	5	Practical to search file in Linux System through command line.
16	6	Demonstrate the networking with Linux.
17	6	Execute the nmcli command.

List of Instruments / Equipment / Trainer Board	
1	One Linux Server and Clients (Cent OS, Fedora or Ubuntu are preferable as an Operating system)

List of textBooks			
No	Title of textBooks	Authors	Publication
1	Linux Red Hat System Administration I [RH124]	Susan Lauber, Philip Sweany, Rudolf Kastl, George Hacker	Red Hat
2	Linux Red Hat System Administration I [RH134]	Wander Boessenkool, Bruce Wolfe, Scott McBrien, George Hacker, Chen Chang	Red Hat
3	Linux Bible, 9th Edition	Christopher Negus	Wiley

Link of Learning Web Resource	
1	https://www.tutorialspoint.com/linux_admin/linux_admin_centos_overview.htm
2	https://www.tutorialspoint.com/linux_admin/basic_centos_linux_commands.htm
3	https://www.tutorialspoint.com/linux_admin/linux_admin_tutorial.pdf