

GANPAT UNIVERSITY									
FACULTY OF ENGINEERING & TECHNOLOGY									
Programme	Diploma Engineering				Branch	Computer Engineering			
Semester	III				Version	1.0.0.0			
Effective from Academic Year		2018-19			Effective for the batch Admitted in		June 2018		
Subject code	1CE2301	Subject Name			Operating System				
Teaching scheme					Examination scheme (Marks)				
(Per week)	Lecture(DT)		Practical(Lab.)		Total	CE	SEE	Total	
	L	TU	P	TW					
Credit	3	0	1	0	4	Theory	40	60	100
Hours	3	0	2	0	5	Practical	30	20	50

Pre-requisites:
Basic Knowledge of Computer, Basic Programming.

Course Learning Outcomes:
<p>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:</p> <p>T1. To understand the concepts, structure and design of operating Systems.</p> <p>T2. To understand the operating system design and its impacting application, system design and performance.</p> <p>T3. To understand the knowledge of process management, file management and memory management.</p> <p>T4. Clear the Concept of Linux command and Shell script.</p> <p>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.</p>

Course Content					
Name of UNIT	Unit Content		Unit Learning Outcomes	Marks	Hrs
UNIT -1 Operating System Concepts	1.1. Need of operating system, Evolution of operating system 1.2. Operating systems: Batch, Multi programming, Time Sharing, Real Multitasking; 1.3. Operating System Services, Case Study: LINUX, Windows, Mac		1.1. Explain different operating system. 1.2. Explain types of operating system 1.3. Study About different operating system and comparison of it.	8	8
UNIT – 2 Processor & Process Management	2.1. Process model overview, 2.2. Programmers view of process, Process states, Process and Processor 2.3. Scheduling: Scheduling Criteria, First Come First Serve, Round Robin, SJF,SRTN; 2.4. Schedulers: Inter Process communication &		2.1. Describe the process overview. 2.2. Describe process model 2.3. State the different process scheduling algorithm. 2.4. Describe the Scheduler and IPC. 2.5. Describe the use of the Deadlock, deadlock detection prevention and	12	8

	<p>synchronization, Race condition, Mutual Exclusion.</p> <p>2.5. Dead lock: Prevention, Avoidance, Detection and Recovery;</p>	<p>recovery.</p>		
<p>UNIT – 3 Memory Management</p>	<p>3.1. Memory management</p> <p>3.2. Contiguous allocation: Partitioned memory allocation, Fixed & variable partitioning</p> <p>3.3. Swapping, Relocation, Protection and Sharing;</p> <p>3.4. Non-contiguous allocation: Page allocation</p> <p>3.5. Segmentation,</p> <p>3.6. Virtual Memory,</p>	<p>3.1. Describe memory management.</p> <p>3.2. Differentiate Contiguous and Non-contiguous memory.</p> <p>3.3. State the use of Swapping, Relocation, protection and sharing.</p> <p>3.4. State the use of non-continuous Page allocation.</p> <p>3.5. Differentiate physical and virtual primary memory</p>	10	9
<p>UNIT – 4 File Management</p>	<p>4.1. File Management</p> <p>4.2. File management: User view of file system, Attributes and operations, File system design, Disk space;</p> <p>4.3. Directory structure,</p> <p>4.4. Disk Organization: Physical structure, Logical structure, Addressing;</p> <p>4.5. Security and Protection mechanism</p>	<p>4.1. Describe file management.</p> <p>4.2. Describe file management in the context of User view of file system, Attributes and operations, File system design, Disk space;</p> <p>4.3. Describe the directory Structure.</p> <p>4.4. Describe different disk organization and addressing.</p> <p>4.5. State the use of security in file management.</p>	15	10
<p>UNIT – 5 Linux Introduction & Shell Programming</p>	<p>5.1. Linux Basics</p> <p>5.2. Overview of Linux, Installation of Ubuntu,</p> <p>5.3. Introduction to shell and commands: pwd, cd, mkdir, rmdir, ls, cat, cp, rm, mv, wc, split, cmp, diff, head, tail, grep, sort, apt-get install, apt-get remove;</p> <p>5.4. Editing files with “vi”, “vim”, “gedit”, “gcc”,</p> <p>5.5. Linux Shell, Basic shell scripts</p>	<p>5.1. Analyse the structure of Linux operating system.</p> <p>5.2. Install the Ubuntu operating system.</p> <p>5.3. Run the basic Linux commands</p> <p>5.4. Describe the file manipulation with vi, vim, gedit and run the c program with gcc.</p> <p>5.5. Construct the different shell scripts.</p>	15	10

List of Practical		
No.	Unit	Name of Practical
1	UNIT 1	Install & test different types of Operating System & compare its features.
2	UNIT 5	Test and run basic Unix commands.
3	UNIT 5	Test and run advanced Unix commands
4	UNIT 5	Test commands related with File editing with Vi, Vim, gedit, gcc.
5	UNIT 5	To create a shell script to print" Hello".
6	UNIT 5	To create a Shell script to read and display content of a file.
7	UNIT 5	To create a Shell script to read from command line.
8	UNIT 5	To create a Shell script to append content of one file to another.
9	UNIT 5	To create a Shell script to accept a string in lower case letters from a user, & convert to upper case letters.
10	UNIT 5	To create a Shell script to find numbers of characters, words & lines of a given input file.
11	UNIT 5	To create a Script to reverse a string and display it.
12	UNIT 5	To create a Script to check a string is palindrome.
13	UNIT 5	To create a Shell script to make calculator.

List of Instruments / Equipment / Trainer Board	
1	Linux Server
2	Linux Client
3	Text editor like vi, vim, gedit

List of Reference Books			
No	Title of Reference Books	Authors	Publication
1	Operating System Concepts	Silberschatz , Galvin, Gagne	wiley
2	Modern Operating Systems	Tanenbaum	Pearson
3	Unix Shell Programming	Yashavant P. Kanetkar	BPB Publication

Link of Learning Web Resource	
1	https://www.tutorialspoint.com/operating_system/
2	https://www.studytonight.com/operating-system/
3	https://www.javatpoint.com/os-tutorial