

COURSE TITLE	FUNDAMENTAL OF OPERATING SYSTEMS
COURSE CODE	05CA0101
COURSE CREDITS	4

Objective:

- 1 Upon completion of this Subject, the student will be able install various types of Operating Systems like win7.
- 2 Students will also able to understand win10, win11 & Linux.
- 3 Students will also able to understand OS level practical like Control panel.
- 4 Students will also able to User administration, Disk management.
- 5 Students will also grab knowledge of Linux operating systems.

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

- 1 Basic of Operating Systems & Installation.
- 2 OS Storage & File Systems.
- 3 Control Panel & Data Recovery.
- 4 OS Networking & IP Address.
- 5 Installation and operation of Linux Operating System

Pre-requisite of course:NA

Teaching and Examination Scheme

Theory Hours	Tutorial Hours	Practical Hours	ESE	IA	CSE	Viva	Term Work
2	0	4	50	30	20	0	50

Contents : Unit	Topics	Contact Hours
1	Basic of Operating systems & Installation, OS Storage & File systems What is Operating System? Introduction to Operating system structure, Understand OS Kernel & shell, Installation of Virtual Platform, Installation of window 7 in Virtual Machine, Basic configuration of Operating systems, Understand Users & groups, Installation of win10, Basic configuration of win10 OS, Installation of basic software, Basic of command, make basic batch file using basic command., Understand OS storage, Introduction of Disk management, Create Partition using various type of file system, Introduction of File system, Understand NTFS & FAT, Features of NTFS: Encryption, Quota, Compression, Security, and Permission in Operating System.	15

Contents : Unit	Topics	Contact Hours
2	Control panel & Data Recovery, OS Networking & IP Address Identification of Windows Shortcut Keys, Shortcut Command,, Control Panel, System Properties, Computer Management, Installing Multiple OS, how to install any Operating system without Data lost, activation of Windows, Driver Installation, Driver Pack Installation, Backup and restore., Basic of Network, Network types, Network Categories, Understand WORKGROUP network, Basic of IP address, configure IP address in Operating system, connecting to two computer, Basic of File sharing, Basic networking configuration in Operating system, Remote desktop	15
Total Hours		30

Suggested List of Experiments:

Contents : Unit	Topics	Contact Hours
1	Unit 1 Initiate the process of deploying Windows Virtualization Platform (Hyper-V) which is engineered to redefine the contours of IT infrastructure., Create VM and install, configure Windows 7, 10 operating systems., Meticulously customizing fundamental parameters such as user profiles and network configurations. , Select and deploy essential software packages pivotal for enhancing system functionality and operational efficiency., Demonstrate proficiency in executing commands, manipulating files and directories, and troubleshooting system issues with finesse and expertise., Batch scripting to automate repetitive tasks and streamline workflows, paving the way for increased efficiency and productivity., Engage in the meticulous orchestration of user management protocols, weaving a tapestry of user accounts, groups, and password policies to fortify system security., Navigate through a spectrum of storage options, meticulously optimizing disk utilization and scalability to meet the evolving demands of your data infrastructure with precision and foresight. , Create Partition using various type of file system., Fortify the fortress of your data assets with robust file encryption protocols, safeguarding sensitive information from prying eyes and potential threats., With proper precision, administer disk quotas to enforce fair usage policies, optimize resource allocation, and prevent runaway consumption, ensuring equitable access and optimal performance across storage infrastructure., Embrace compression technologies to shrink the footprint of data, liberating valuable disk space without compromising accessibility or performance, heralding a new era of efficiency and resource optimization in storage ecosystem., Embrace the robust security features of BitLocker to encrypt entire partitions, thwarting malicious actors and ensuring the sanctity of your data integrity in the face of evolving cybersecurity threats.	30

Suggested List of Experiments:

Contents : Unit	Topics	Contact Hours
2	Unit 2 Shortcut keys tailored to navigate and manage system services with unparalleled efficiency. These intuitive keystrokes empower to swiftly access and manipulate critical services, enhancing ability to maintain system stability and performance with effortless finesse., Seamlessly bridge the gap between intent and action as you wield shortcut commands to swiftly launch and access the Services console., Navigate the labyrinth of system configurations with finesse as you embark on the journey of managing Control Panel settings., Peel back the layers of system architecture as you unveil the intricate tapestry of System Properties, providing invaluable insights into the core characteristics and configurations of your computing environment., Embark on a journey of versatility and flexibility as you embrace the paradigm of dual boot installation, unlocking the ability to seamlessly switch between multiple operating systems on a single machine., Securing the resilience of your operating system with proactive measures as you embark on the essential task of OS backup., Uphold the integrity of your software ecosystem and ensure compliance with licensing agreements through meticulous Windows activation protocols., Embrace the power of streamlined installation processes to seamlessly integrate essential drivers, ensuring optimal hardware functionality and compatibility with operating system environment., Strengthen the resilience of your computing environment with proactive measures as you create restore points to safeguard system integrity, preserving critical system configurations, enabling swift recovery., Engage in the secure customization of network settings as embark on the journey of configuring IP addresses, subnet masks, gateway IPs, and DNS IPs., Sharing Files and Folders between two systems, Empower users to access their desktop environments from anywhere, at any time, fostering flexibility and mobility in the modern workplace., Empower IT team to remotely access and assist users in real-time, guiding them through technical challenges and resolving issues with efficiency and expertise. , Forge a seamless bridge between host and virtual machines as to establish connectivity between these essential components of computing infrastructure.	30
Total Hours		60

Textbook :

- 1 CompTIA A+ Complete Study, Quentin Doctor & Jon Buhagiar, Sybex (an imprint of Wiley), 2022

References:

- 1 CompTIA A+ Complete Study Guide, CompTIA A+ Complete Study Guide, Quentin Doctor & Jon Buhagiar, Sybex, 2022

References:

- 2 Windows 10 Step by step, Windows 10 Step by step, Joan Lambert & Steve Lambert, Microsoft Press, 2015
- 3 Windows 10 Inside Out, Windows 10 Inside Out, Ed Bott & Craig Stinson, Microsoft Press, 2020

Suggested Theory Distribution:

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

Distribution of Theory for course delivery					
Remember / Knowledge	Understand	Apply	Analyze	Evaluate	Higher order Thinking / Creative
20.00	30.00	25.00	15.00	10.00	0.00

Instructional Method:

- 1 Board Work
- 2 PPT
- 3 Demo

Supplementary Resources:

- 1 <https://www.geeksforgeeks.org/introduction-of-operating-system-set-1>
- 2 https://www.tutorialspoint.com/operating_system/index.htm