Course Curriculam

Course Code: IT307

Course Level UG

Course Title Exploring the Networks

Course Description :

Credit Units

L	T	P/S	SW	AS/DS	FW	No. of PSDA	Total Credit Unit
3	0	2	0	0	0	0	4

Course Objectives :

SN.	Objectives
1	• To introduce the fundamental networking concepts and technologies • To understand the architecture, structure, functions and components of the Internet • To understand the architecture, structure, functions and components of the computer networks • To connect the various segments of LAN • To understand the configuration of routers and switches • To understand the ip addressing scheme.

Pre-Requisites : General

SN.	Course Code	Course Name

Course Contents / Syllabus :

SN.	Module	Descriptors / Topics	Weightage
1	Module I: Exploring the Network	Networking Today, LAN, WAN & Internet, The Network as Platform, the changing network environment, Introduction to CISCO IOS, Navigating the IOS, The command structure, Accessing a CISCO IOS device, Saving configuration, Addressing devices	20.00
2	Module II: Network Protocols and Communications	Rules of communication, Protocol, Protocol suites, Data Encapsulation, accessing local resource, Accessing remote Resource, Connecting to the network, Purpose of the physical layer, Network media, Data Link layer, Layer 2 frame structure, Layer 2 standard, Media Access Control	20.00
3	Module III: Ethernet	Ethernet Protocol, Ethernet Standard, Ethernet MAC, ARP, ARP issue, LAN Switches, Switching, Layer 3 switching, Cisco Express forward, Network Layer Protocol, Network communication, IPv4, IPv6.	20.00
4	Module IV: Transport Layer	Transport Layer Protocol, Transportation of Data, Introduction to TCP & UDP, TCP & UDP port Addressing, TCP Communication, UDP Communication	20.00
5	Module V: IP Addressing and Application Layer	IPv4 Network Addresses, IPv4 subnet mask, Types of IPv4 addresses, IPv6 Network addresses, Types of IPv6 Network addresses, ICMP, Subnetting an IPv4 network, Network segmentation, Addressing Scheme, Design considerations for IPv6, Application Layer Protocols, Network Security Fundamentals, Network Application Communications, Building and securing a small network.	20.00

Course Learning Outcomes :

SN.	Course Learning Outcomes
1	Plan and effectively build simple LANs
2	Deploy and effectively perform basic configurations for routers and switches
3	Implement the IP addressing schemes
4	Describe the key components and technologies related to internet.

Pedagogy for Course Delivery :

SN.	Pedagogy Methods
1	The class will be taught using classroom teaching methodology. Students' learning and assessment will be on the basis of four quadrants and flipped class method. E-content will be also provided to the students for better learning. The class will be taught using theory, practical and case-based method.

Theory /VAC / Architecture Assessment (L,T & Self Work): 0.00 Max : 100

N/A

Lab/ Practical/ Studio/Arch. Studio/ Field Work Assessment : 0.00 Max : 100

N/A

List of Professional skill development activities :

No.of PSDA : 0

SN.	PSDA Point

Text & References :

SN.	Type	Title/Name	Description	ISBN/ URL
1	Book	Cisco Networking Academy Programme CCNA 1 & 2 Companion Guide, 3rd Edn by Pearson Education		
2	Book	Cisco Networking Academy Programme CCNA 1 & 2 Lab Companion, 3rd Edn by Pearson Education		
3	Book	Cisco Networking Academy Programme CCNA 1 & 2 Engineering General, 3rd Edn by Pearson Education		
4	Book	CISCO CCNA-Exploration 4.0, Module 1 , Pearson Education.		
5	Book	Data Communications and Networking by Behrouz Forouzan, 3e, Tata McGraw-Hill		
6	Book	Computer Networks by Andrews S. Tanenbaum, 4e, Pearson Education		
7	Url	https://learningspace.cisco.com/		
8	Url	https://learningnetwork.cisco.com/index.jsp a		