NS3EDU.

Learn Today $ Earn Tomorrow

# COURSE

# Hardware Networking Diploma

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# NS3EDU: BRIDGE YOUR IT DREAMS TO REALITY

## EMPOWERING CAREERS THROUGH KNOWLEDGE

Looking to make it big in the world of IT networking? Look no further than NS3Edu! We help beginners learn the ropes & experienced pros master new skills. Come join us and build your dream career!

## CERTIFICATES



## MISSION

The mission of NS3Edu is to empower our candidates with in-depth knowledge of IT fundamentals along with real-time industry experience and also take 100% responsibility for the placement by making them Industry fit.

## VISION

In-depth knowledge + hands-on experience + analytical thinking = placement

# ROADMAP OF JOB PLACEMENT

Confused in **Different** Career Options

Counselling & **Demo** sessions

Student Enrollment & Induction **session**

Course **Kick** off (Live Classes)

**Access to** Recorded Sessions, E book & Lab Manual

**Qualifies**- Job Placement

Opportunities for **Job** Placement

Screening by Corporate **HR** & **Tech** Team

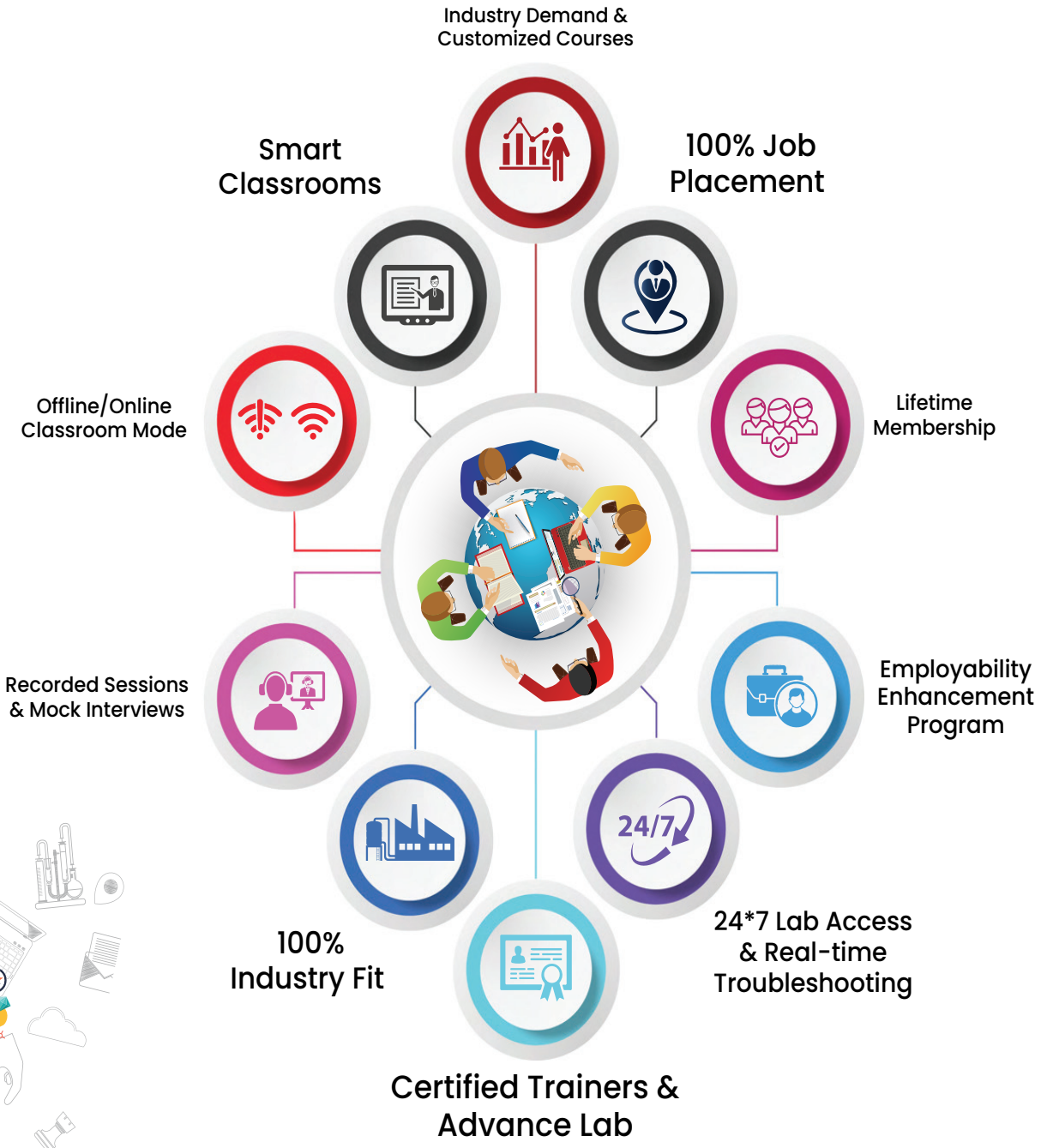
2 Week **Technical Task** Training

NS3 Tech **Industrial** Exposure

Course **Completion**

# WHAT MAKES US UNIQUE?

## USP's



# HARDWARE
## COURSE OUTLINE

## Module-1

1 Basics of Computer
2 What is Hardware & Types of hardware
3 Processor or cpu
4 Motherboard
5 Ram
6 Storage
7 Sata/ATA/NVME
8 Smps
9 Types of Storage
10 Bios
11 Types of Bios
12 Windows & MS office installation
13 Printer
14 Scanner
15 Pci slots
16 NIC
17 Ports
18 Front panel setting
19 Pc security
20 Firewall inbound/outbound
21 Password break of windows
22 Hardware/pc assembling
23 Monitor
24 Networking/devices & cables
25 MS Office

## Module-1 Exam

# NETWORKING ASSOCIATE
## COURSE OUTLINE

## Module-2

### 1. General Networking
- Introduction to Networks
- OSI Reference Model
- Ethernet Technologies
- Hubs vs Switches vs Routers
- IPv4 Addressing and Subnetting
- IPv6 Addressing
- TCP & UDP
- Introduction to 802.11 Wireless
- Cisco 802.11 Implementations

### 2. CCNA
**Network Fundamentals**

- Explain the role and function of network components
- Describe characteristics of network topology architectures
- Compare physical interface and cabling types
- Identify interface and cable issues (collisions, errors, mismatch duplex, and/or speed)
- Compare TCP to UDP
- Configure and verify IPv4 addressing and subnetting
- Describe the need for private IPv4 addressing
- Configure and verify IPv6 addressing and prefix
- Compare IPv6 address types
- Verify IP parameters for Client OS (Windows, Mac OS, Linux)
- Describe wireless principles
- Explain virtualization fundamentals (virtual machines)

## Network Fundamentals

- Configure and verify VLANs (normal range) spanning multiple switches
- Configure and verify inter switch connectivity
- Password Recovery And Switch Reset (Layer2/Layer 3)
- Configure and verify Layer 2 discovery protocols (Cisco Discovery Protocol and LLDP)
- Configure and verify (Layer 2/Layer 3) EtherChannel (LACP)
- Describe the need for and basic operations of Rapid PVST+ Spanning Tree Protocol and identify basic operations
- Upgradation of the Firmware's for Layer 2 and Layer 3 Switches through TFTP and USB
- Compare Cisco Wireless Architectures and AP modes
- Factory Reset of Access Points and Basic Ap Configuration
- Describe physical infrastructure connections of WLAN components (AP,WLC, access/trunk ports and LAG)
- Describe AP and WLC management access connections (Telnet, SSH, HTTP,HTTPS, console, and TACACS+/RADIUS)
- Configure the components of a wireless LAN access for client connectivity using GUI only such as WLAN creation, security settings, QoS profiles, and advanced WLAN settings

## IP Connectivity

- Interpret the components of routing table
- Determine how a router makes a forwarding decision by default
- Configure and verify IPv4 and IPv6 static routing
- Configure and verify single area OSPFv2
- Describe the purpose of first hop redundancy protocol

## Security Fundamentals

- Define key security concepts (threats, vulnerabilities, exploits, and mitigation techniques)
- Describe security program elements (user awareness, training, and physical access control)
- Configure device access control using local passwords
- Describe security password policies elements, such as management, complexity, and password alternatives (multi factor authentication, certificates, and biometrics)
- Describe remote access and site-to-site VPNs
- Configure and verify access control lists
- Configure Layer 2 security features (DHCP snooping, dynamic ARP inspection, and port security)
- Differentiate authentication, authorization, and accounting concepts
- Describe wireless security protocols (WPA, WPA2, and WPA3)
- Configure WLAN using WPA2 PSK using the GUI
- Converting an AP from Mobility Express to CAPWAP Type and Vice Versa
- Configuration of AP as a Controller
- WLAN Configuration Cisco Mobility Express Controller with (WPA,WPA2,WPA3, Guest WLAN)

### Automation & Programmability

- Explain how automation impacts network management
- Compare traditional networks with controller-based networking
- Describe controller-based and software defined architectures (overlay, underlay, and fabric)
- Compare traditional campus device management with Cisco DNA Center enabled device management
- Describe characteristics of REST-based APIs (CRUD, HTTP verbs, and data encoding)
- Recognize the capabilities of configuration management mechanisms Puppet Chef & Ansible
- Interpret JSON encoded data
- License Installation Process For Cisco L2/L3 Devices

### Job Assistance

- Cisco Certified Trainer
- Bilingual Lectures
- Hands on Lab
- Q&A Preparation and Assessment Module
- Recorded Sessions

## Module-2 Exam

# NETWORKING
# Professional in Encor-Enarsi
# Course Outline

## Module-3

### Week(1)

- CCNA and Over View Of CCNP Enterprise
- Introduction Of TCP/IP Model, L2 Forwarding, Mac Address Table Concept
- Vlan Introduction and configuration, Types of Vlan, DTP and Native Vlan
- Trunk and Access port, Dynamic Auto and Dynamic Desirable practical, Concept of Sub Interfaces (Show Interval routing using routers).
- Practical Day For All the topics we have covered.

### Week(2)

- Forwarding Architecture: - Process Switching, Cisco Express Forwarding (CEF) || Revision Day
- Introduction To Spanning Tree Protocol (STP), Root Bridge Elec on, how to calculate Loop Free Topology
- Basic practical of spanning tree on Rack, Root Bridge Manipulation method,
- Cost manipulation, explain STP Port states
- PVST + and CST Difference, Show practical of load balancing
- Introduction to RSTP, RSTP Port States, RSTP synchronization + Practical

### Week(3)

- Topology change in PVST + and RSTP (compare and show which is better)
- STP Mechanism --STP Protection with practical (Root Guard, Loop Guard)
- STP Protection: - BPDU Guard, BPDU Filter, UDLD [Practical on All the Protection Concepts]
- Introduc on To MST (Multiple Spanning Tree), Intra Region MST and Inter Region MST.
- Introduction to VTP version1 & VTP Version2

## Week(4)

- VTP version 3 with Practical.
- Introduction to ether channels, Requirement, Static, Dynamic (PAGP and LACP)
- Practical of EtherChannel, Layer3 EtherChannel
- Introduction to routing, static routing with packet flow on same and different Network.
- Introduction to EIGRP, Messages in EIGRP, Neighborship Process

## Week(5)

- EIGRP metric calculation process, DUAL
- Equal and Unequal Cost Load Balancing with practical with offset list
- Route Summarization on EIGRP, what is summarization (basic), EIGRP authentication
- Route Filtering EIGRP (Distribution List: - Standard Acl, Extended Acl, Prefix-List & Route Map)
- Introduction to OSPF, OSPF Neighborship and Adjacency process

## Week(6)

- Explanation to LSA (type 1 and type 2)
- Inter area OSPF operations, type 3 LSA with practical
- Type 4 and type 5 LSA in OSPF, OSPF Authentication
- OSPF Area types with practical
- OSPF Path Selection (Intra Area Routes, Interarea Routes and Equal Cost Multipathing).

## Week(7)

- Summarization Of Routes and Route Filtering.
- Redistribution (Basic and Advance)
- OSPF Revision and One More Practical Day for the OSPF.
- DHCP and DNS Packet Flow On the basis of Interview Purpose.
- Introduction to BGP, why we use BGP, Single home, multi home, what is public and private AS

## Week(8)

- BGP Session Types, BGP Messages and BGP Neighbor States.
- BGP neighborship process with practical (EBGP and IBGP)
- Introduction to route advertisement in BGP with Practical
- BGP Path manipulation atiributes
- Introduction to multicast, Multicast address range, multicast in LAN (introduction)

## Week(9)

- IGMP Version 2&3 and IGMP snooping.
- Introduction to QOS, Classification, marking.
- Introduction to FHRP, HSRP
- HSRP practical, HSRP preempt feature
- Load Balancing in HSRP, Introduction to GLBP

## Week(10)

- Complete GLBP with practical. Introduction to VRRP with practical.
- NAT on IOS, static, dynamic and PAT with practical, NTP
- PBR with practical
- SNMP and Syslog
- DMVPN Phase1 with IPsec configuration

## Week(11)

- Introduction to IPV6, Address types, you can add it in future
- stateless autoconfig feature in IPv6, Static Routing with IPV6
- Overlay networks, GRE tunnel with practical
- IPSEC basic, ISAKMP, IKEv1, Explain negotiation process and phases (just an overview for the same)
- Wireless (Describe Layer 1 concepts, such as RF power, RSSI, SNR, interference noise, band & channels, & wireless client devices capabilities)

## Week(12)

- Wireless (Describe AP modes and antenna types)
- Describe the components of network security design (Threat Defense, Endpoint Security, NGFW, Network access control with 802.1x, MAB, and Web AUTH)
- AAA
- AAA
- ASA

## Week(13)

- Data plane and management Security
- uRPF
- MPP Copp
- NAT PAT
- SPAN RSPAN

## Week(14)

- IP SLA and Net flow
- MPLS
- QOS
- SD WAN
- PREPARATION FOR INTERVIEW

## Week(15)

- PREPARATION FOR INTERVIEW

# Module-3 Exam

| Duration | 6 Months |
|---|---|
| **Training Hours**<br>Weekday<br>Weekends | <br>2 hrs<br>3-4 hrs |
| **Training Mode** | **Online / Offline** |
| **Session Type** | **Personalized** |
| **Study Material** | **Yes** |

# EMPLOYABILITY SKILLS

PD Classes

Resume Building

Technical Workshops

Linkedin Classes

Q/A Prepration

Hands on Practice with Advance Devices

Mock Interview rounds with HR & Tech Team

Internship Opportunities

# OUR PLACEMENT PARTNERS

# ACHIEVEMENTS

**1500+** Training Hours

**500+** Placements

**50+** Corporate Training

**200+** International /Domestic Batches

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