

# CLOUD COMPUTER **DIPLOMA**



# TABLE OF CONTENT

1	Overview	3
2	Roadmap of Job Placements	4
3	USP's	5
4	Course Outline	6 – 19
5	Our Placement Partner	21



# 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



Learning



Opportunity



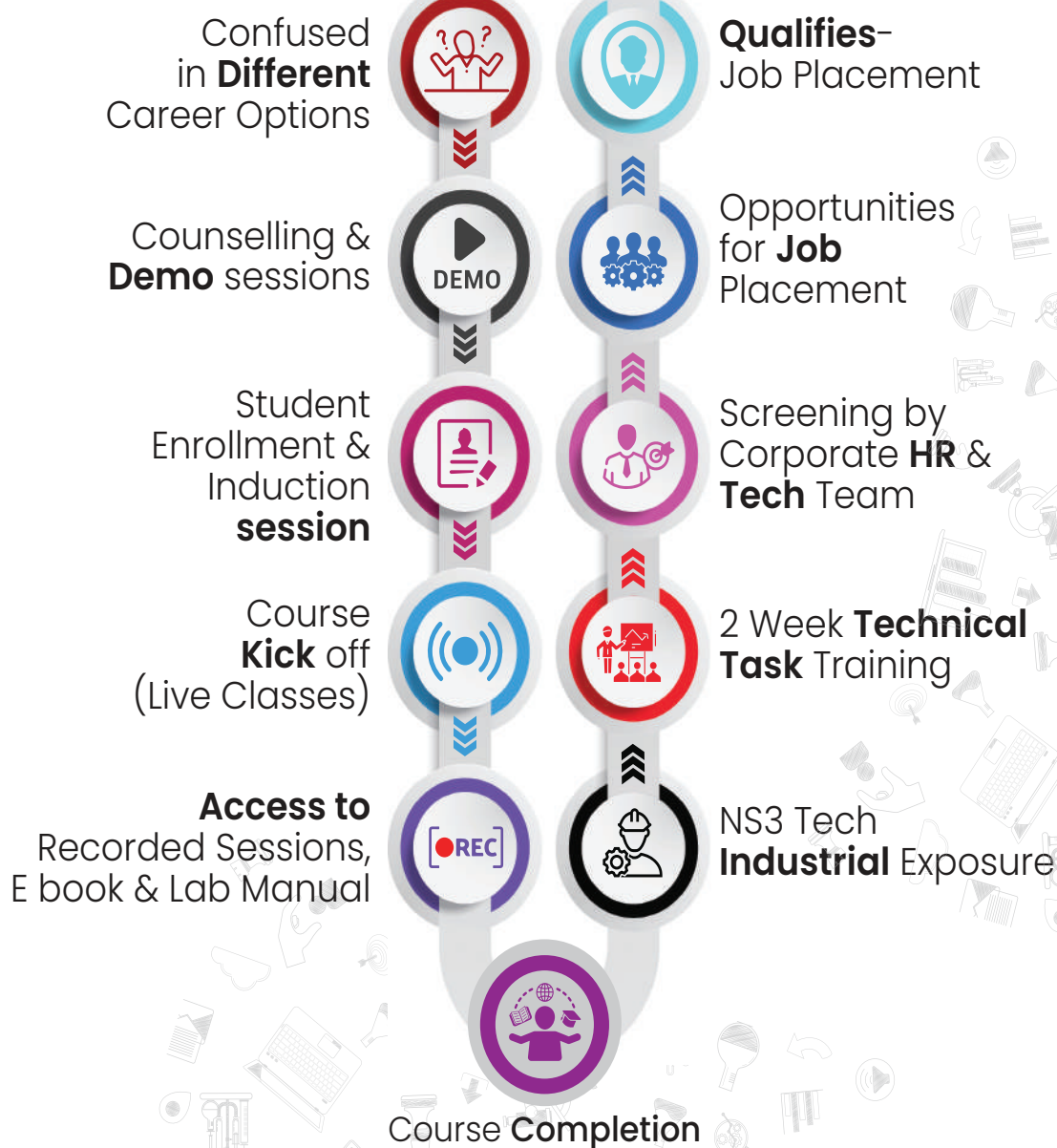
Experience



Career



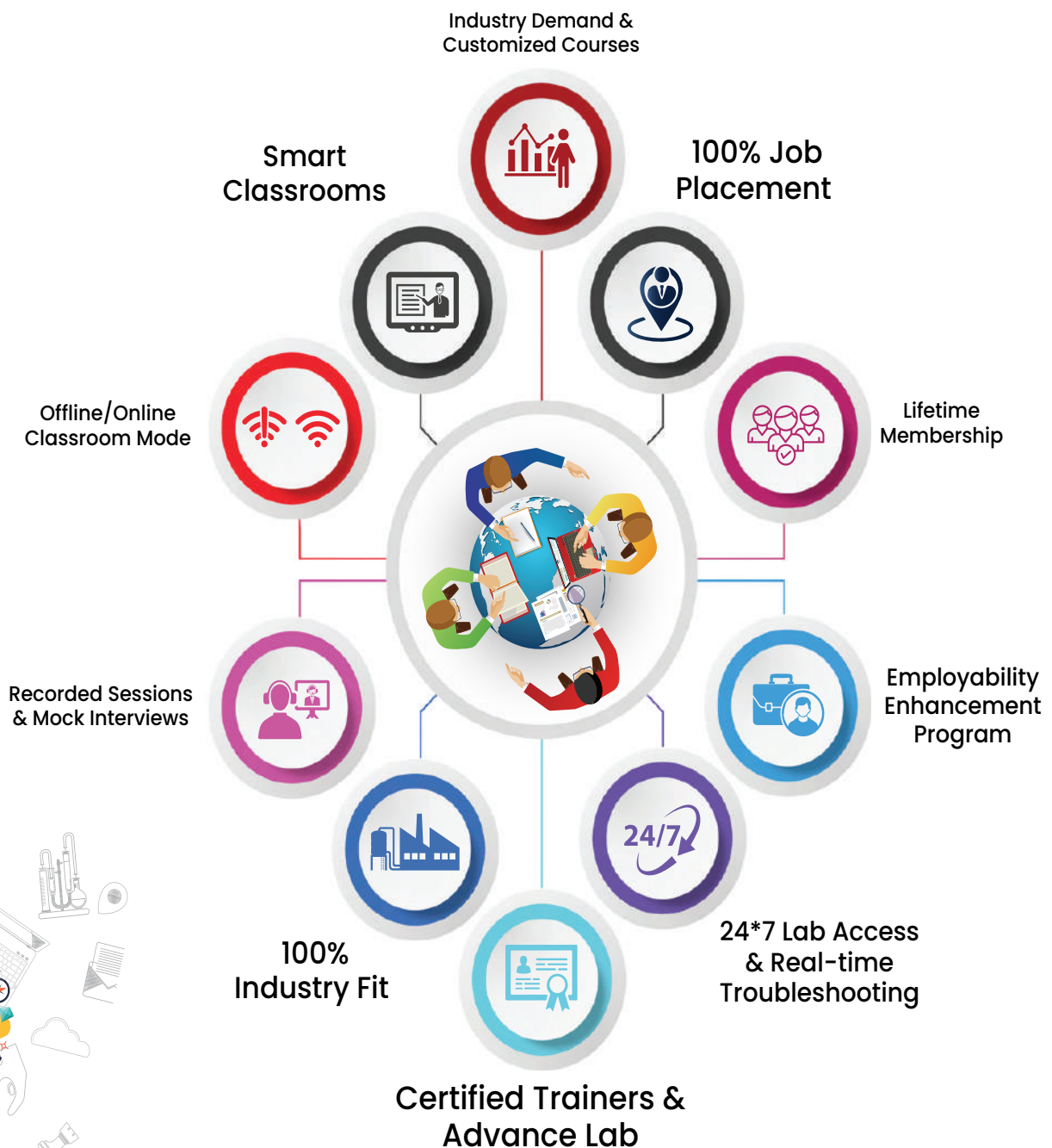
# ROADMAP OF **JOB** PLACEMENT





# WHAT MAKES US UNIQUE?

## USP's



# NETWORKING ASSOCIATE

## COURSE OUTLINE

### Module-1

#### 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-1 Exam



Learning



Opportunity



Experience



Career

# LINUX COURSE OUTLINE

## Module-2

### 1) Linux Introduction

- What is Linux
- Why Linux
- Linux vs Windows
- CLI vs GUI

### 2) Distribution of Linux

- Types of Linux
- Different edition of Linux

### 3) Lab-setup & (errors-fix)

- VMware vs Virtual box
- Installation of VMware
- Licensing
- Interface setting's

### 4) Linux Interface

- Introduction to Linux interface
- Difference B/W Linux UI & Windows UI
- Setting up tools and other packages
- Getting familiar with Linux

### 5) Access command line

- What is Terminal
- Types of Terminal
- Setting up Terminal
- Learning Basic commands For CLI
- Top 100 Commands

### 6) Linux directory structure

- Understanding Linux Directory Structure
- Absolute path VS Relative path
- Getting familiar with Root Directory



## 7) Moving around directories

- Moving around via GUI & CLI
- Accessing Restricted files & directories

## 8) Create,view,edit text files via command line

## 9) Manage files from terminal

## 10) Getting help in linux

- Troubleshooting Common Linux Problem

## 11) Managing users in Linux

- Who is Root User
- Who is Service User
- Create user using Terminal
- Delete user's using Terminal
- Modify user using Terminal
- What is passwd file
- How to open Passwd file?

## 12) Managing groups in Linux

- What are Groups?
- Create Groups
- Delete Groups
- Set up Group Password

## 13) File permission

- How to access File Permission
- Understanding Linux file Permission
- Changing File permission
- Changing File Owner

## 14) Operators used in command line

- What are Operators
- Why are Operators used for?

# Module-2 Exam



Learning



Opportunity



Experience



Career

# AWS COURSE OUTLINE

## Module-3

### Lesson 01 – AWS Overview

- AWS Overview
- History and Evolution of AWS Knowledge Check
- Overview of AWS Products and Services Quiz
- Key Takeaways

### Lesson 02 – Designing Highly Available, Cost-efficient, Fault-tolerant, & Scalable Systems

- Designing Highly Available, Cost-efficient, Fault-tolerant, and Scalable Systems How to design Cloud Services
- Knowledge Check Planning & Designing Knowledge Check Monitoring and Logging
- Knowledge Check
- Hybrid IT architectures
- Knowledge Check
- Practice Assignment Designing Hybrid Storage
- Quiz

### Lesson 03– Identity and Access Management (IAM)

- IAM Overview and Policies
- Knowledge Check
- IAM Users, Groups, and Roles Knowledge Check
- IAM Best Practices
- IAM Users, Groups, and Roles Knowledge Check
- IAM Best Practices
- Practice Assignment Configuring IAM Access Quiz
- Key Takeaways





## Lesson 04 – Amazon Virtual Private Cloud(VPC)

- Amazon Virtual Private Cloud (VPC)
- Amazon VPC and Subnets
- Networking
- Using Security Groups and Network ACLs Knowledge Check
- Amazon VPC Best Practices and Costs Practice Assignment
- Designing a Custom VPC Quiz
- Knowledge Check

## Lesson 05- Elastic Compute Cloud (EC2)

- Cloud Compute with AWS
- Amazon EC2 Overview Amazon Machine Images (AMI)
- Launch and connect to an EC2
- Linux instance Demo 1
- Launch and connect to an EC2 Windows instance Demo 2
- Create an AMI Demo 3
- Introduction to EC2 Instance Types
- Overview of Amazon EBS
- EC2 Pricing Knowledge Check
- Elastic Load Balancing (ELB)
- Auto Scaling
- AWS Services
- AWS Lambda Demo
- Amazon Elastic Container Service Knowledge Check
- EC2 Best Practices & Costs Practice Assignment
- Configure ELB Quiz
- Key Takeaways

## Lesson 06 – Amazon Simple Storage Service(S3)

- Amazon Simple Storage Service (S3) S3 Overview and Buckets Knowledge Check
- Version Control and Lifecycle Management Knowledge Check
- CloudFront and CDNs Knowledge Check
- Security & Encryption Knowledge Check
- Amazon Import – Export Snowball Knowledge Check
- S3 Best Practices and Costs
- Practice Assignment Create an Amazon S3 bucket
- Quiz
- Knowledge Check

## Lesson 07 – Amazon Route 53

- Amazon Route 53 Concepts
- Knowledge Check
- Amazon Route 53 Best Practices and Costs
- Practice Assignment Amazon Route 53 Hosted Zone 0 Quiz
- Key Takeaways

## Lesson 08 – Databases

- Databases Overview
- Amazon Relational Database Service (RDS)
- Amazon ElastiCache
- Amazon DynamoDB
- Amazon Redshift
- Amazon Aurora
- AWS Database Migration Services (DMS)
- Database Best Practices and Costs
- Practice Assignment
- Amazon RDS Quiz
- Key Takeaways

## ● Lesson 9– Application Services

- AWS Application Services
- Amazon Elastic Transcoder
- Amazon Workspaces
- Application Services Best Practices and Costs
- Practice Assignment Amazon SNS
- Quiz
- Key Takeaways

## Lesson 10 – Security Practices for optimum Cloud Deployment

- Security Practices for Optimum Cloud Deployment
- AWS Responsibilities and Security Attributes
- Knowledge Check
- AWS CloudFormation and Design patterns
- Practice Assignment AWS CloudWatch Quiz
- Key Takeaways

## Lesson 11 – Disaster Recovery

- Disaster Recovery
- Overview and Products for Disaster Recovery
- Practice Assignment Disaster Recovery
- Quiz
- Key Takeaways

## Lesson 12 – Troubleshooting

- Troubleshooting Troubleshooting and Support Quiz
- Key Takeaways

## Lesson 13 – AWS Solutions Architect Exam

- AWS Solutions Architect Exam
- Exam Overview and Study Tips
- Knowledge Check
- Key Takeaways

# Module-3 Exam



# DEVOPS COURSE OUTLINE

## Module-4

### Weeks 1

- Understand DevOps
- Roles and responsibilities
- Understand the infrastructure layouts and its challenges
- Important terminology
- Continuous Integration and Deployment

### Weeks 2

- Introduction to multi-tier architecture Application
- Software Development Life Cycle
- DevOps tools
- Traditional models for SDLC

#### **Git and Maven**

- Introduction to GIT and github

### Weeks 3

- GIT branches
- Initialize remote repositories
- Rebasing
- Push commits to github
- Resetting



## Weeks 4

- Reverting
- 17 Conclusion
- 18 Create builds using maven

### Jenkins

- 19 Introduction to continuous integration
- 20 Jenkins master slave architecture

## Weeks 5

- Understanding CI/CD pipelines
- 22 Creating an end-to-end automated CI/CD Pipelines

### Hands-on- exercise -

- 23 Creating a Jenkins Master Slave on AWS
- 24 Installing Plug-ins in Jenkins
- 25 Creating Jenkins Builds

## Weeks 6

- Creating Scheduled Builds
- Triggering Jobs using Git Web Hooks
- Using the Pipeline Plugin in Jenkins
- Introduction to DevOps
- Understand DevOps

## Weeks 7- Docker

- Introduction to Docker
- Understanding Docker Lifecycle
- Components of Docker Ecosystem
- Common Docker Operations
- Creating a DockerHub Account



## Weeks 8

- Committing changes in a Container
- Pushing a Container Image to DockerHub
- Creating Custom Docker Images using Dockerfile

### **Hands-on-exercise -**

- Common Docker Operations
- Creating a DockerHub Account

## Weeks 9

- Committing Changes to a Container
- Pushing container to DockerHub
- Creating Local Image Repository
- Building an Image using Dockerfile

### **Ansible**

- What is Ansible?

## Weeks 10

- Ansible Architecture
- Setting up Master slave using Ansible
- Ansible Playbook
- Ansible Roles
- Applying Configuration using Ansible

## Weeks 11

- Installing Ansible
- Creating Playbook using YAML
- Creating an Ansible role

### **CHEF**

- What is Chef and its key components
- Installing Chef Workstation



## Weeks 12

- Cookbooks and Recipes
- Nodes and configuration Management
- Templates and Cookbook Attributes
- Chef Server
- Version Control and Testing

## Weeks 13–Chef Automate

- Committing Changes to a Container
- Pushing container to DockerHub  
Creating Local Image Repository
- Building an Image using Dockerfile
- **Ansible**
- What is Ansible?

## Weeks 14

- Provisioning and Deployment
- Variables and Modules
- Conditional logic and loops
- Terraform State and Data Sources
- Terraform & Continuous Integration/Deployment (CI/CD):

## Weeks 15–Kubernetes

- Introduction to Kubernetes
- Docker Swarm vs Kubernetes
- Alternate ways of deploying Kubernetes
- YAML Files
- Creating a Deployment in Kubernetes using YAML



## Weeks 16

- Services in Kubernetes
- 77 Ingress in Kubernetes
- 78 Case Study – Kubernetes Architecture

### **Kubernetes lab continues & Nagios**

#### **Hands-On-Exercise –**

- Setting up Kubernetes using kubeadm
- Installing Kubernetes using kops and GCK

## Weeks 17

- Creating a Deployment
- Creating Services
- Creating an Ingress
- Demonstrating the use of Ingress, services & deployments together

### **Nagios**

- What is nagios?

## Weeks 18

- How to configure nodes?
- Monitor different nodes

## Module-4 Exam



# 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



**HCL**



Infosys



**STU**

**DELL**



velocis



Capgemini



**NETGEAR**



aruba  
a Hewlett Packard  
Enterprise company

**IBM**

**FORTINET**



Learning



Opportunity



Experience



Career

# ACHIEVEMENTS



## GURUGRAM<sup>(H.O)</sup>

B9, 3rd Floor, 302, Block B,  
Old DLF, Sector 14, Gurugram  
Haryana

+91 8800011138  
info@ns3edu.com

## LUCKNOW

Office space 1, First Floor Omaxe  
Avenue Near Omaxe City  
Bijnor Rd, Lucknow

+91 7703030320  
info\_lko@ns3edu.com

## DELHI<sup>(BADARPUR)</sup>

Property No:-3, 3<sup>rd</sup> Floor Main  
Mathura road nearby Badarpur  
Police Station, Ch. Dharamvir  
Market Badarpur New Delhi 110044

+91 7428080999  
info\_bpb@ns3edu.com



 [www.ns3edu.com](http://www.ns3edu.com)

 +91 8800 0111 38

Follow us for **Job Placement** & Knowledge updates

