Designing and Implementing Enterprise Network Assurance (ENNA) Course

Course Duration: 32 Hours **Course code: ENNA**

1. Course Overview

This course provides IT professionals with the knowledge and skills required to design, implement, and manage enterprise network assurance solutions using modern Cisco technologies. It focuses on monitoring, analytics, troubleshooting, and optimizing network performance using tools like Cisco DNA Center. Participants will learn how to gain deep visibility into network operations, proactively detect issues, and ensure consistent network performance and user experience across enterprise environments.

2. What you'll learn?

Designing and Implementing Enterprise Network Assurance teaches you how to monitor, analyze, and optimize enterprise networks using advanced assurance tools. You will gain expertise in telemetry, network analytics, proactive troubleshooting, AI-driven insights, and automation to ensure high availability, performance, and reliability of enterprise networks.

3. Target Audience

This course is ideal for:

1- Network Engineers and Network Administrators

2- Network Operations Center (NOC) Engineers

3- System Engineers and Technical Support Engineers

4- IT Professionals responsible for network monitoring and performance

4. Pre-Requisites

1- Networking Fundamentals: Understanding of routing, switching, and TCP/IP

2- Enterprise Networking Knowledge: Familiarity with enterprise network architecture

3- Cisco Fundamentals: Basic understanding of Cisco devices and solutions

4- Monitoring Concepts: Basic knowledge of SNMP, Syslog, and NetFlow

5- General IT Knowledge: Understanding of network troubleshooting methodologies

5. Course content

Module 01 – Introduction to Network Assurance

Overview of Network Assurance Concepts

Importance of Visibility and Performance Monitoring

Traditional vs Modern Assurance Approaches

Module 02 – Cisco DNA Center Overview

Introduction to Cisco DNA Center Architecture

Key Features and Capabilities

Role in Network Assurance

Module 03 – Telemetry and Data Collection

Introduction to Network Telemetry

Streaming Telemetry vs SNMP

Configuring Data Collection Methods

Module 04 – Network Monitoring and Analytics

Real-Time Network Monitoring

Analyzing Network Health and Performance

Using Dashboards and Reports

Module 05 – Client and Application Assurance

Monitoring Client Connectivity
Application Performance Monitoring
Identifying Bottlenecks and Latency Issues

Module 06 – AI-Driven Assurance and Insights
Introduction to AI/ML in Network Assurance
Predictive Analytics and Anomaly Detection
Proactive Issue Identification

Module 07 – Troubleshooting and Root Cause Analysis
Network Issue Identification Techniques
Root Cause Analysis (RCA)
Automated Troubleshooting Workflows

Module 08 – Automation and Remediation
Automating Network Issue Resolution
Event-Driven Automation
Integration with ITSM Tools

Module 09 – Assurance for Wireless Networks
Monitoring Wireless Performance
Troubleshooting Wireless Connectivity Issues
Optimizing User Experience

Module 10 – Security and Compliance Monitoring
Monitoring Security Events
Ensuring Network Compliance
Detecting Anomalies and Threats

Module 11 – Best Practices and Real-World Use Cases
Designing an Effective Assurance Strategy

Enterprise Case Studies

Hands-On Labs and Practical Scenarios