Course Outline - Diploma in Enterprise Network Engineering

Academic Period: **2023 - 2024**

Applicable NOC Code: **Computer engineers (except software engineers and designers) (NOC 21311), Computer network technicians (NOC 2281) and User support technicians (2282)**

Credential Awarded - **Diploma**

Prerequisites - **Ontario Secondary School Diploma or equivalent**

Program Duration - **52 Weeks**

Avg Hourly Income in Toronto Region - **As high as $53 per hour** *(Source: jobbank.gc.ca)*

Course Rationale -

The Diploma in Enterprise Network Engineering program aims to provide students with comprehensive knowledge and practical skills in the field of enterprise network engineering. It focuses on preparing students for a career in designing, implementing, and managing enterprise-level networks. The program covers various networking technologies, cybersecurity principles, desktop support, cloud administration, and Linux systems. Students will develop the necessary skills to configure, troubleshoot, and secure complex network infrastructures.

Course Description -

The Diploma in Enterprise Network Engineering program is a 52-week training program that covers a wide range of modules related to enterprise network engineering. Students will learn about Cisco networking, desktop support, Azure administration (cloud administration), cybersecurity, and Linux systems. The program combines theoretical knowledge with hands-on practical training to ensure students are equipped with the skills required in real-world networking environments.

Modules covered in the course -

1. **CISCO Networking**

   a. CCNA Enterprise (Exam 200-301) - CCNA validates the ability to install, configure, operate, and troubleshoot medium-size networks with routing and switching. The new curriculum includes Network fundamentals, Network access, IP connectivity, IP services, Security fundamentals, basic mitigation of security threats, wireless networking and Automation.

   b. CCNP - ENCORE (Exam 350-401) - Implementing and Operating Cisco Enterprise Network Core Technologies (ENCORE) course gives you the knowledge and skills needed to configure, troubleshoot, and manage enterprise networks. You'll also learn to implement security principles within an enterprise network and SD-WAN technologies.

   c. CCNP - ENARSI (Exam 300-410) - The Implementing Cisco Enterprise Advanced Routing and Services (ENARSI) gives you the knowledge you need to install, configure, operate, and troubleshoot an enterprise network. This course covers advanced routing and infrastructure technologies, expanding on the topics covered in ENCOR.

2. **Desktop Support**

   a. CompTIA A+ (Exam 200-101)- PC hardware and peripherals I mobile device hardware I networking and troubleshooting hardware and network connectivity issues

   b. ComTIA A+ (Exam 200-102) - Installing and configuring operating systems including Windows I OSI Android I Apple OS X and Linux. It also addresses security in the fundamentals of cloud computing and operational procedures.

   c. Configuring Windows 10 (Exam MD-100) - Installing, upgrading, and migrating to Windows 10, Deploying Windows 10, Configuring hardware, and applications, Configuring network   connectivity, Configuring access   to resources, Configuring mobile computing, Monitoring and maintaining systems that run Windows 10, And configuring backup and recovery options.

   d. Enterprise Desktop Support - Windows 10 (Exam MD-101) - Identify and Resolve New   Software   Installation Issues, Software   Configuration issues, Software Failure, Logon Issues, Network Connectivity Issues, Name Resolution Issues,   Network Printer Issues, Performance Issues, Hardware Failure Issues, Wireless   Connectivity   Issues,   Remote   Access   Issues, Manage   File

Synchronization, Internet Explorer Security Issues, Firewall Issues, Issues Due To Malicious Software, Encryption Issues, Software Update Issues.

3. **Azure Administration (Cloud Administration)**

You will learn to manage identities and governance in Azure while implementing and managing storage. Learn how to deploy and configure virtual machines, containers, and manage virtual networks.

4. **Cyber Security**

   a. CompTIA Security + (ExamSY0-501) - Security+ focuses on the latest cyber security trends and techniques in risk management, risk mitigation, threat management, intrusion detection and emphasizes security professionals to be better prepared to solve a wider variety of security issues.

5. **Linux**

   a. CompTIA Linux+ - (Exam LX0-03) - System Architecture I Linux Installation and Package Management I GNU and Unix Commands Devices I Linux File system I Filesystem Hierarchy Standard

   b. CompTIA Linux+ - (Exam LX0-04) - Shells, Scripting and Data Management I User Interfaces and Desktops Administrative Tasks I Essential System Services I Networking Fundamentals I Security

Learning Outcomes -

Upon successful completion of the program, students will be able to:

1. Configure, troubleshoot, and manage medium-sized networks using Cisco networking technologies.
2. Implement and operate Cisco enterprise network core technologies, including security principles and SD-WAN technologies.
3. Install, configure, and troubleshoot enterprise routing and services, expanding on advanced routing and infrastructure technologies.
4. Perform desktop support tasks, including hardware and software troubleshooting, installation and configuration of operating systems, and network connectivity issues.
5. Deploy and configure Windows 10 systems, manage network connectivity and access to resources, and ensure system security and backup.
6. Identify and resolve software installation, configuration, and performance issues in enterprise desktop support for Windows 10.
7. Manage identities and governance in Azure, deploy and configure virtual machines and networks, and manage storage in a cloud environment.
8. Understand cyber security trends and techniques, risk management, intrusion detection, and be prepared to solve a variety of security issues.
9. Demonstrate knowledge of Linux systems, including system architecture, installation, package management, file systems, and administrative tasks.
10. Develop skills in shells, scripting, data management, user interfaces, networking fundamentals, and security in Linux systems.

Note: The learning outcome may vary based on every individual's learning objectives and focus on the program.

These course outcomes provide a more detailed understanding of the specific skills and knowledge students will acquire upon completing the Diploma in Enterprise Network Engineering program. The course outcomes cover a broad range of networking technologies, desktop support, cloud administration, cybersecurity, and Linux systems, preparing students for a successful career in enterprise network engineering.