Mining Network Foundation

Learn the fundamentals of mine networks, including an overview of how networking enables key applications.

Empowering professionals with cutting-edge skills and real-world operational technology experience.

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Overview:

The Mining Network Foundation Course provides a broad range of fundamental knowledge for OT careers. Through a combination of lecture and hands-on labs, you will learn the basic how to install, operate, configure, and verify a basic IPv4 and OT network. The course covers cabling, managing network devices, understanding network components such as switches, WoCs, and Wireless LANs.
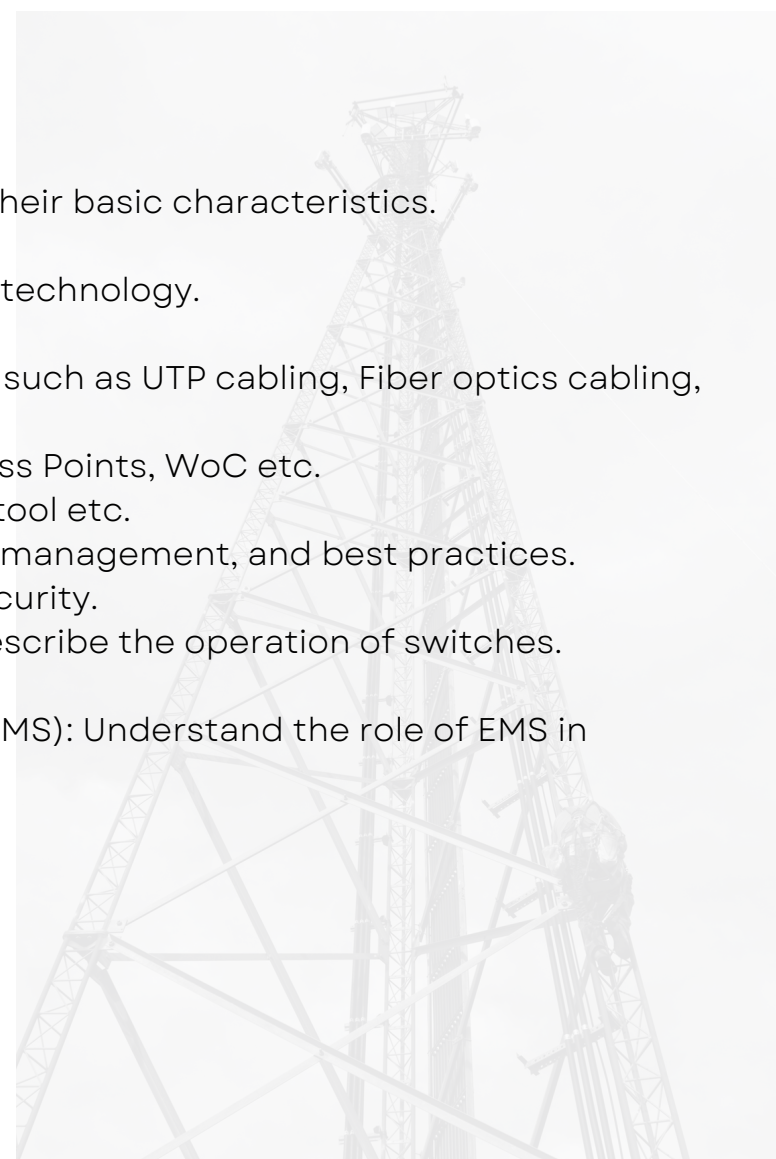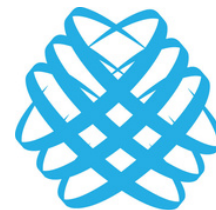
Target Audience:

Anyone looking to start a career in Operational Technology or an experienced Technician, Planner, Operational Team, Cyber Security Specialist, or IT Manager.

Objectives:

After completing this course, you should:
- Identify the components of a computer network and describe their basic characteristics.
- Understand the model of host-to-host communication.
- Differentiate between Operational technology and Information technology.
- Differentiate types of network topologies.
- Understand the different types of physical network connection such as UTP cabling, Fiber optics cabling, wireless connections.
- Describe the network hardware devices such as switches, Access Points, WoC etc.
- Describe the networking software such as network monitoring tool etc.
- Understand the fundamental concepts of power, its requisites, management, and best practices.
- Have basic knowledge about Remote Access, protocols, and security.
- Describe Ethernet as the network access layer of TCP/IP and describe the operation of switches.
- Install a switch and perform the initial configuration.
- Have a basic knowledge about Element Management System (EMS): Understand the role of EMS in managing network elements such as WoCs.

Course Outline:

Day 1:

Module 1: Introduction to Computer Networking
- Definition of computer networks
- Importance and applications of computer networks
- Components of a computer network and their basic characteristics

Module 2: Host-to-Host Communication Model
- Understanding the model of host-to-host communication
- Overview of OSI and TCP/IP models

Module 3: Operational Technology vs. Information Technology
- Differences between Operational Technology (OT) and Information Technology (IT)
- Their respective roles in network infrastructure

Module 4: Network Topologies
- Overview of different types of network topologies
- Characteristics, advantages, and disadvantages of each topology

Module 5: Physical Network Connections
- Types of physical network connections: UTP cabling, fiber optics cabling, wireless connections
- Characteristics and applications of each type
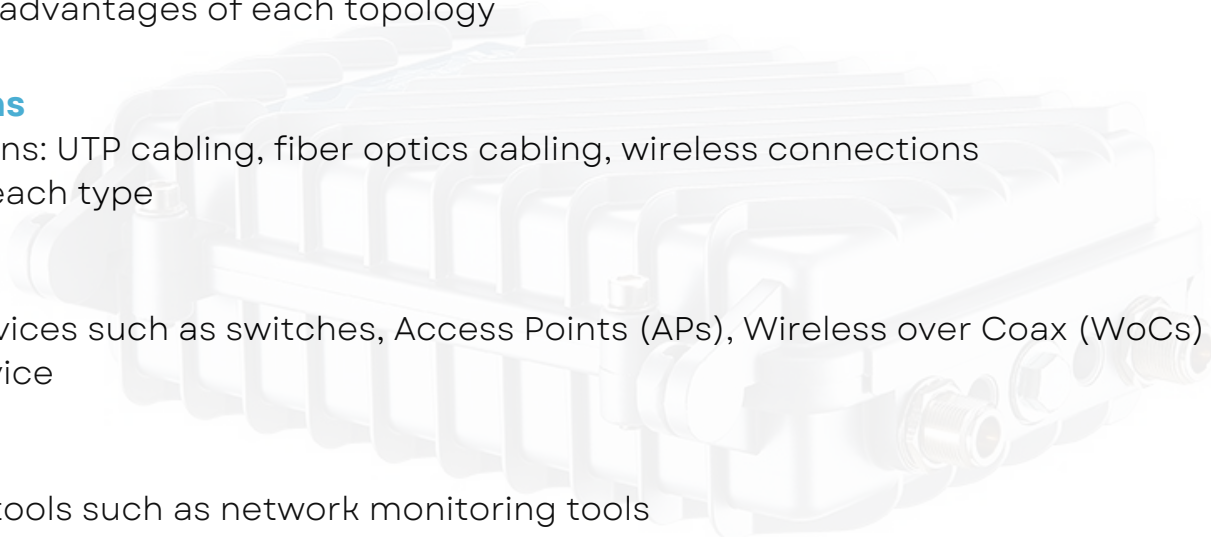
Module 6: Network Hardware Devices
- Description of network hardware devices such as switches, Access Points (APs), Wireless over Coax (WoCs)
- Roles and functionalities of each device

Module 7: Networking Software
- Description of networking software tools such as network monitoring tools
- Functions and applications of network software in network management

Module 8: Power Management in Networking
- Fundamental concepts of power in networking
- Power requisites, management, and best practices for network infrastructure

Module 9: Remote Access and Security
- Introduction to remote access and remote access protocols
- Security considerations for remote access connections

Module 10: Ethernet and Switch Operation
- Description of Ethernet as the network access layer of TCP/IP
- Operation of switches in a network environment

Module 11: Switch Installation and Configuration
- Steps to install a switch in a network setup.
- Initial configuration of switches for network operation

Assessment and Practical Sessions:

Quizzes and assessments at the end of each module to evaluate understanding.
Practical Hands-On Sessions for Installing and Configuring Network Switches and WoCs.

Resources:
- Online resources covering networking fundamentals.
- Hands-on labs with networking equipment for practical exercises
- Instructor-led demonstrations and presentations

This course provides a comprehensive understanding of computer networking fundamentals, covering both theoretical concepts and practical applications over the span of two days. Each module is designed to build upon the previous one, ensuring participants have a solid foundation in networking principles and practices.

Prerequisites:
Attendees should meet the following prerequisites:
- Basic computer literacy
- Basic PC operating system navigation skills
- Basic internet usage skills

Price:
- $1,500 + GST = $1,650 total

Dates Available:
- October 21, 28; November 4, 11, 18, 25; December 2, 9