IMINS2024 - MANAGING INDUSTRIAL NETWORKING FOR IOT WITH CISCO TECHNOLOGIES

Course Code: 860021

Managing Industrial Networks for Manufacturing with Cisco Technologies (IMINS2024) is a lab-intensive course, which helps you with the skills required to successfully implement and troubleshoot the most common industry standard protocols while leveraging best practices needed in security and Wireless technologies for today's industrial networks. The IMINS2024 course helps plant administrators, control system engineers and traditional network engineers in the manufacturing, process control, and oil and gas industries, who will be involved with the convergence of IT and Industrial networks.

This course is job-role specific and enables you to achieve competency and skills to configure, maintain, and troubleshoot industry-standard network protocols as well as wireless and security technologies to ensure that current infrastructures are maximized while developing a converged platform for flexibility to support future business outcomes. Students will be exposed to multiple industrial network technologies as well as products from Cisco and other industrial suppliers.

The course qualifies for 30 Cisco Continuing Education Credits (CE).

What You'll Learn

Upon successful completion of this course, you will be able to meet these overall objectives:

- Upon completing this course, you will be able to meet these objectives:
- Understand the functions of the OSI Layers and TCP/IP Model
- Recognize the differences between Enterprise and Industrial Networks
- Troubleshoot common issues found in Layers 1, 2, 3 of the OSI Model
- Describe the functions and components of Ethernet/IP Protocols
- Configure and troubleshoot CIP on Cisco
- Describe the functions and components of the PROFINET protocol
- Configure PROFINET Protocols on Cisco Industrial Ethernet Devices
- Troubleshoot common PROFINET Issues
- Identify common network threats and resolutions and configure basic security

components (Access Lists and AAA Features)
- Configure a wireless network within an industrial environment

Who Needs to Attend

This course is designed for IT and operations technology (OT) professionals and control engineers who will be involved with the installation, configuration, and troubleshooting of networked industrial products and solutions for the following industries:

- Manufacturing
- Process control
- Oil and gas
- Other industries as applicable

Prerequisites

The knowledge and skills that a learner should have before attending this course are as follows:

- Describe network fundamentals and build simple LANs
- Establish Internet connectivity
- Manage network device security
- Expand small- to medium-sized networks with WAN connectivity
- Describe IPv6 basics
- Identify Cisco industrial networking solutions
- Describe Cisco Industrial Ethernet switches and Cisco Connected Grid switches and routers
- Interpret design and drawings
- Recognize zone and cell topologies
- Install industrial network components
- Deploy industrial network components
- Perform basic maintenance tasks on the network
- Troubleshoot network and control issues

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CLASSROOM LIVE	$4,595 USD	5 Day

Classroom Live Outline

Module 1: Industrial Networking Concepts and Components

- Contrasting Enterprise and Industrial Environments
- Configuration Tools for Industrial Ethernet Switches
- Exploring Layer 2 Considerations
- Layer 2 Resiliency Using Spanning-tree Protocol
- Layer 2 Resiliency Considerations
- Layer 2 Multicast Control and QoS
- Exploring Layer 3 Considerations

Module 2: General Troubleshooting Issues

- Troubleshooting Methodologies
- Troubleshooting Layer 1
- Troubleshooting Layer 2 Issues
- Troubleshooting Layer 3 Issues

Module 3: Ethernet/IP

- Exploring Ethernet/IP Communications
- Exploring Hardware Capabilities
- Exploring CIP Sync, CIP Motion, and CIP Safety
- Exploring Embedded Switch Technology

Module 4: Troubleshooting EtherNet/IP

- Identifying Common EtherNet/IP Issues
- EtherNet/IP Troubleshooting Methods and Tools

Module 5: PROFINET

- Describe PROFINET Functionality and Connection Method

- Describing Basic PROFINET Devices

Module 6: Configuring PROFINET

- Enabling and Prioritizing PROFINET at L2
- Integrating Cisco Industrial Ethernet Switches

Module 7: Troubleshooting PROFINET

- Identifying PROFINET Troubleshooting Methods
- Exploring PROFINET Troubleshooting Tools

Module 8: Exploring Security Concerns

- Overview Of Defense-in-Depth Strategy
- Controlling Access and Network Traffic

Module 9: 802.11 Industrial Ethernet Wireless Networking

- Understanding 802.11 Networks
- Industrial WLAN Design Considerations

Classroom Live Labs

Labs are designed to assure learners a whole practical experience, through the following practical activities:

- Connecting to the remote Lab environment
- Configuring 802.1q Trunks
- Configuring and Applying Custom Smartports Macros
- Configuring and Applying EtherChannel
- Configuring Resilient Ethernet Protocol
- Configuring Resilient Ethernet Protocol Features
- Configuring & Verifying Storm Control
- Verify IP IGMP Snooping
- Configure QoS settings
- Using IOS Troubleshooting Tools
- Troubleshooting Layer 2 Endpoint Device Connectivity
- Troubleshooting Layer 2 Inter-Switch Connectivity
- Troubleshooting Broken REP Segment
- Troubleshooting Layer 3
- Perform a Packet Capture
- Troubleshoot Network Issues
- Configure CIP on Industrial Switches
- Troubleshooting EtherNet/IP Communication Issues
- Configuring PROFINET Support
- Troubleshoot PROFINET Communication Issues
- Configure Port Security Mechanisms
- Configure AAA Authentication using Cisco ISE and 802.1x

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- Troubleshooting Layer 1
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- Troubleshooting Layer 3 Issues

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Jan 26 - 30, 2026 | 10:00 AM - 6:00 PM EST

Mar 9 - 13, 2026 | 10:00 AM - 6:00 PM EST

Visit us at www.globalknowledge.com or call us at 1-866-716-6688.

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