

# Introduction To Networking

Course: **00024**

Filter: **Beginner**

Duration: **3 days**

Category:: **Networking**

Price: **3000,00 €**

## About Course

Take a more active part in the discussion and decision-making processes related to networking technology issues. In this training course, you take your first step toward networking and data communications exposure, and gain the practical knowledge and skills to become comfortable with basic concepts, technologies, components, and design alternatives.

## What you'll learn

- Apply fundamental network concepts, terminology, and solutions
- Implement networks using data links and physical media
- Deploy Local Area Networks (LANs) using Ethernet and Wi-Fi
- Manage reliable internetworks and intranets using TCP/IP design

## Pre-requisites

- A general understanding of what computers and networks are used for in your personal and professional life

## Curriculum

### Module 1: Introduction

- Supporting QoS
- Classifying networks: LAN, WAN
- Packet
- Circuit
- Wired
- Wireless
- Standardizing data communications
- Executing a troubleshooting methodology
- Employing fault isolation at each layer

## **Module 2: Constructing Networks Using Data Links**

- Defining bits, bytes and packets
- Taking advantage of digital encoding
- Detecting and correcting errors
- Using ACKs and feedback error correction

## **Module 3: Deploying Physical Media**

- Selecting copper cable types, Cat-5e and better
- Benefiting from fiber optics
- Utilizing radio frequencies and bands
- Managing interference and noise

## **Module 4: Capitalizing on Ethernet**

- Forwarding with MAC addresses
- 1 Mb/s to 100 GB/s
- Contrasting shared and switched LANs
- Dissecting Etherswitch operation
- Adding QoS to Ethernet
- Comparing Layer 2 and Layer 3 switching

## **Module 5: Harnessing Wi-Fi for User Mobility**

- Types of Wi-Fi networks: a, b, g, n and ac

- Capitalizing on instant infrastructure and mobility
- Verifying accurate transmission
- Boosting speed and range with 802.11n and 802.11ac
- Providing QoS for voice and multimedia
- Forwarding traffic via the AP
- Leveraging dual-band APs
- Utilizing Service Set Identifiers (SSIDs)

## **Module 6: Building Internetworks Using TCP/IP and Routers**

- Employing TCP for data and UDP for voice and video
- Maximizing TCP/IP's multiple applications and utilities
- Streamlining data and VoIP traffic
- Increasing efficiency with addressing schemes
- Interpreting net-prefixes and subnet masks
- Relaying traffic with NetID and routing tables
- Discovering paths with routing protocols
- Upgrading routers for QoS

## **Module 7: Implementing Security Best Practices**

- Authenticating users
- Enabling VPN encrypted tunnels
- Verifying information integrity and source
- Analyzing threats and security requirements
- Achieving confidentiality with encryption
- Implementing L2 and L3 tunnels
- Adopting digital certificates and signatures
- Wi-Fi security: WPA, WPA2, 802.11i, AES
- Isolating workgroups with VLANs
- Deploying firewalls

## **Module 8: Creating Enterprise Networks**

- Circuit-switching data streams
- E1 and T1 leased lines
- Choosing xDSL options

- LAN Extension Services (LES) and Metro-Ethernet
- Multiprotocol Label Switching (MPLS)
- Software-defined networks
- Cloud computing and services