

**TRAINING TITLE**

**DATA COMMUNICATIONS AND NETWORKING**

**Training Duration**

**5 day**

**Training Venue and Dates**

<b>Ref. No.</b> CSI55	<b>Data Communications and Networking</b>	<b>5</b>	<b>13-17 Jan. 2025</b>	<b>\$5,500</b>	<b>DUBAI, UAE</b>
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In any of the 4 or 5-star hotels. The exact venue will be informed later.

**Training Fees**

- \$5,500 per participant for Public Training includes Materials/Handouts, tea/coffee breaks, refreshments & Lunch

**Training Certificate**

**Define** Management Consultants Certificate of course completion will be issued to all attendees.

**TRAINING DESCRIPTION**

This course provides a comprehensive understanding of data communications and networking fundamentals. Participants will learn the essential concepts, technologies, and protocols that enable effective communication over networks, including both local and wide-area networks. The course also covers network design, security, troubleshooting, and the latest networking technologies.

**TRAINING OBJECTIVES**

**By end of the course participants will be able to understand**

- Understand the basics of data communication and networking technologies.
- Learn about network topologies, protocols, and communication models.
- Develop skills to design, configure, and manage network systems.
- Understand network security principles and how to protect networks from threats.
- Gain practical experience in troubleshooting common networking issues.

**WHO SHOULD ATTEND?**

- Network engineers and administrators
- IT professionals and technicians
- Systems administrators

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- Anyone interested in pursuing a career in networking or IT infrastructure
- Students preparing for networking certifications (e.g., CompTIA Network+, CCNA)

### **TRAINING METHODOLOGY**

A highly interactive combination of lectures and discussion sessions will be managed to maximize the amount and quality of information and knowledge transfer. The sessions will start by raising the most relevant questions and motivating everybody to find the right answers. You will also be encouraged to raise your own questions and to share in the development of the right answers using your own analysis and experiences. Tests of multiple-choice type will be made available on daily basis to examine the effectiveness of delivering the course.

Very useful Course Materials will be given.

- 30% Lectures
- 30% Workshops and work presentation
- 20% Group Work & Practical Exercises
- 20% Videos & General Discussions

### **COURSE PROGRAM**

#### **Day 1: Introduction to Data Communications**

- Basics of data communication: analog and digital signals
- Components of a communication system (sender, receiver, transmission medium)
- Data transmission modes (simplex, half-duplex, full-duplex)

#### **Day 2: Networking Fundamentals and Protocols**

- Overview of computer networks and network topologies (LAN, WAN, MAN)
- OSI and TCP/IP models
- Key networking protocols (IP, TCP, UDP, HTTP, DNS, DHCP)

#### **Day 3: Network Devices and Routing**

- Key network devices: routers, switches, hubs, modems
- Functionality and configuration of network devices
- Routing basics: static and dynamic routing protocols (e.g., RIP, OSPF)

#### **Day 4: Network Security**

- Introduction to network security concepts and challenges
- Security protocols: firewalls, VPNs, encryption, and intrusion detection

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- Best practices for securing wired and wireless networks

### Day 5: Network Troubleshooting and Advanced Topics

- Common networking issues and troubleshooting techniques (ping, tracert, etc.)
- Tools for network analysis and performance monitoring
- Emerging networking technologies (SDN, IoT, 5G, cloud networking)

**NOTE:**

**Pre-& Post Tests will be conducted.**

**Case Studies, Group Exercises, Group Discussions, Last Day reviews, and assessments will be carried out.**



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