EPEC Datacom & Video Module 1: Copper Communications

Objectives

Upon completion of this module, you will be able to:
- Describe the basics of copper structure cabling application.
- Identify copper structure cabling, connectors and hardware.
- Recognize the tools and procedures of copper structure cabling.
- Identify test equipment and procedures.

Chapter Outline

Chapter 1: Expanding Your Opportunities
- A. The Role of Electrical Distributors
- B. The EPEC Triangle
- C. Considering Product Selection Variables and Preferences

Chapter 2: Communications Standards
- A. Organizations Providing Standards
- B. TIA Standards
- C. Structured Cabling

Chapter 3: History of Cabling
- A. Networked Computing Systems
- B. Ethernet Networks
- C. Twisted Pair Cable

Chapter 4: UTP Cable Categories
- A. UTP Cable Standards
- B. TIA Level & Categories
- C. UTP Cable Specifications

Chapter 5: Copper Cables
- A. Legacy Copper Cables
- B. Coaxial, Siamese, RapidRun, and Access Control Cables
- C. Parallel and Serial Communications

Chapter 6: Copper Connectors
- A. Copper Cable Jacks and Plugs
- B. Modular Connectors
- C. IBM Token Ring and Coaxial Connectors

Chapter 7: Patch Panels and Punchdown Blocks
- A. Patch Panels
- B. 110 and 66 Punchdown Blocks

Chapter 8: Copper Cabling Systems
- A. Structured Cabling System
- B. Installation Standards
- C. Zone Cabling and Cable Ties

Chapter 9: Copper Tools and Installation
- A. Tools for Copper Communication Installation

Chapter 10: Copper Testing
- A. Testing Network Communication Installations
- B. Wire Mapping Versus Performance Testing
- C. UTP and Coax Test Requirements

Chapter 11: EPEC Assignment

EPEC Datacom & Video Module 2: Fiber Optics

Objectives

Upon completion of this module, you will be able to:
- Recognize how fiber optics is used in VDV applications.
- Compare fiber optics to cable.
- Identify the variety of fiber-optic components and where they are used.
- Explain how fiber is installed and terminated and what tools are needed.
- Recognize fiber-optic test equipment and procedures.

Chapter Outline

Chapter 1: Introduction to Fiber Optics
- A. History and Applications of Fiber-optic Cabling
- B. Outside Plant and Premises Cabling

Chapter 2: How Fiber Works
- A. Wavelength and Microns
- B. Multimode and Singlemode Fiber

Chapter 3: Fiber Specifications
- A. Multimode Fiber-optic Cable Sizes
- B. Causes of Attenuation
- C. Bandwidth Characteristics

Chapter 4: Fiber-optic Cables
- A. Cable Types
- B. Cable Rating Codes
- C. Cable Selection and Installation

Chapter 5: Fiber-optic Connectors and Splices
- A. Fiber-optic Connectors
- B. Fiber-optic Adhesives
- C. Fiber-optic Polishing Techniques

Chapter 6: Fiber-optic Splicing
- A. Splicing Fiber-optic Cable
- B. Fusion vs. Mechanical Splicing
- C. Cleavers, Splice Trays and Enclosures

Chapter 7: Fiber-optic Cable Plants and Hardware
- A. Cable Plant Applications
- B. Fiber-optic Hardware

Chapter 8: Fiber-optic Tools
- A. Important Installation Tools
- B. Tool Functions

Chapter 9: Fiber-optic Testers
- A. Types of Testers
- B. Functions of Testers

Chapter 10: EPEC Assignment

EPEC Datacom & Video Module 3: Cable Pathways and Management

Objectives

Upon completion of this module, you will be able to:
- Define communications pathways and spaces.
- Identify communications administration standards.
- Identify telecom room standards.
- Identify products, their applications, and the advantages and disadvantages of each.

Chapter Outline

Chapter 1: Cable Pathway Standards
- A. Cable Pathways
- B. Standards for Cable Pathways

Chapter 2: Types of Cable Pathways
- A. Types of Horizontal Pathways
- B. Advantages and Disadvantages

Chapter 3: Administrative Standards
- A. TIA 606 Standards
- B. TIA 606-B Labeling Format

Chapter 4: Types of Cable Management
- A. Products for Cable Management
- B. Cable Management Applications

Chapter 5: Telecom Room Standards & Products
- A. Standards for Telcom Room Construction
- B. Shallow Rooms

Chapter 6: EPEC Assignment

EPEC Datacom & Video Module 4: Networks, Telephony, Sound & Video

Objectives

Upon completion of this module, you will be able to:
- Identify electronic components of a network.
- Identify components of a telephone system.
- Identify components of a sound system.
- Identify components of a video system.

Chapter Outline

Chapter 1: Computer Networks
- A. Wireless Connectivity
- B. Hubs, Switches and Routers
- C. Shared and Switched Ethernet

Chapter 2: Electronic Networking Components
- A. Electronic Networking Components
- B. Routers, Switches and Bridges
- C. Network Data Transfers

Chapter 3: Telephone Systems and Components
- A. Evolution of Telephone Systems
- B. Components of a Telephone System

Chapter 4: Sound Systems
- A. Speaker Selection
- B. VoIP and Traditional Sound Systems

Chapter 5: Sound System Components
- A. Components of Sound Systems
- B. Application of Sound Components

Chapter 6: Video Systems
- A. Components of Video System
- B. System Design
- C. Components of Home Theater Installations

Chapter 7: EPEC Assignment

EPEC Datacom & Video: Final Exam

This exam presents 100 random questions based on the content presented in Datacom & Video modules 1 through 4. There is no time limit for this exam, and you need to score 75% or higher to pass.

EPEC Datacom & Video: Capstone Project

Objectives

Upon completion of this module, you will be able to:
- Review plans and specifications.
- Determine the best products for a specified application.
- Consider product selection variables and trade-offs.
- Create a professional bill of materials.
- Develop a professional cut package using supplier catalogs and other industry and company resources.

Chapter Outline
   A. EPEC Capstone Project