Fiber Optic Essentials Training

Course Description

This course delves into the fundamental principles underlying semiconductor devices and circuits. It provides a comprehensive understanding of semiconductor materials, diodes, transistors, amplifiers, oscillators, and other essential components in electronic circuits. Through theoretical concepts and practical applications, students will gain proficiency in analyzing, designing, and troubleshooting semiconductor-based circuits.

Audience

This course is designed for participants in electrical engineering, electronics engineering, or related fields. It is also suitable for professionals seeking to enhance their knowledge and skills in semiconductor device technology and circuit design.

Pre-requisite Knowledge/Skills

This course is designed for:

- Telecommunications professionals
- Network engineers and designers
- IT professionals involved in network infrastructure
- Technicians and installers
- Students and individuals seeking to enhance their knowledge of fiber optic technology

Course Objectives

By the end of this course, participants will be able to:

- Understand the fundamental principles and standards of fiber optics.
- Use specialized terminology and jargon pertinent to fiber optics.
- Comprehend the role of fiber optics in communication networks and architectures.
- Identify various fiber optic transmission systems and components.
- Recognize different types of optical fiber and their applications.
- Understand the types and applications of fiber optic cables.
- Perform fiber optic terminations and splicing.
- Conduct fiber optic testing using appropriate instruments and methodologies.
- Design and plan fiber optic networks, including link loss budgets and project documentation.
- Install fiber optic cable plants following industry best practices.

Certificate of Completion

- Get a "Certificate of Completion" When You Complete the Course
- After you complete the Fiber U Basic Skills Lab Copper Cabling online self-study course, you can now take an online exam and, when you pass the exam, get a "Certificate of Completion" for this course. You should complete all lessons including taking the quiz ("Test Your Comprehension") at the end of every lesson. When you think you are prepared, you can take an online exam for a nominal fee which will give you a "Certificate of Completion" for this course.

Course Outline

Module-wise Table of Contents (TOC):

Lesson 1: Introduction, Overview, Standards, Safety

- Basic Overview
- Fiber optic standards
- Fiber optic safety

Lesson 2: Fiber Optic Jargon

- How to talk Fiber optics
- Language of Fiber optics
- Specialized Fiber optic terms

Lesson 3: Fiber Optic Communications

- Fiber optics and communications
- Networks
- Network Architectures
- Network Bandwidth

Lesson 4: Fiber Optic Transmission Systems And Components

- Fiber optic datalinks
- Fiber optic transceivers for data links
- Wavelength division multiplexing

Lesson 5: Optical Fiber

- Optical Fiber
- Plastic Optical Fiber

Lesson 6: Fiber Optic Cable

- Fiber Optic cable
- Different types and applications

Lesson 7: Termination and Splicing

- Terminations
- Splicing

Lesson 8: Fiber Optic Testing

- Fiber optic testing
- Fiber optic test instruments
- Five different ways of testing according to standards
- OTDR testing, Reading an OTDR trace
- Loss and Power Budgets
- Measuring optical power, units of measure
- Visual tracing and fault location
- Patch cord or single cable testing

Lesson 9: Fiber Optic Network Design

- Network design
- Link loss budgets
- Project Paperwork

Lesson 10: Fiber Optic Installation

- Fiber optic installation
- Installing fiber optic cable plants
- Installing Cable: General guidelines

Next → Who May Apply For Direct FOA Certification

For most certifications you must have at least 2 years recent experience working as a technician in a field that involves fiber optic communications. Qualifying work is typically in the following technical areas: telecommunications, Internet, CATV, IT/LANs/Data Centers or any of the many fields that use fiber for communications like the oil and gas industry,

industrial controls, intelligent highways, security, military or government services, etc. Specialist certifications may have specific work requirements.