

Fiber Installation and Activation

OVERVIEW

Fiber Installation and Activation provides indispensable and up-to-date information on the deployment of fiber in optical broadband networks. The course outlines the basics of light transmission through optical fibers, how fibers are combined into optical cables and how fiber networks are designed and constructed. Network architecture, topology and design are also covered. Fiber Installation and Activation demonstrates how to install and activate fiber-optic networks and also prepares the student to splice fibers using mechanical and fusion methods. The course assumes previous knowledge and experience in RF Broadband Technology.

Delivery Options:

📖 Learning takes place using a textbook. Lesson and final exams are taken online.

📀 This course contains a DVD.

Completion Time:

Varies based on the student's self-study pace, however, the maximum time allowed is six months from enrollment.

BENEFITS

Upon completion students will:

- » understand how fiber-optic systems are designed and constructed
- » have the knowledge to identify and use fiber-optic installation equipment and components
- » gain 12 BICSI continuing education credits for RCDD, RCDD/LAN, RCDD/OSP, Residential Installer, Installer Level 2 and Technician
- » earn two hours of college credit
- » receive an industry-recognized Jones/NCTI™ certificate of graduation

Ideal for:

Technical personnel, including:

- » fiber optics technicians
- » service technicians
- » network technicians

COURSE OBJECTIVES

Upon completing this course students will be able to:

1. describe how a transmitted signal is attenuated inside the fiber
2. recognize common standards used in fiber-optic transmission systems
3. define five tolerance mismatches that can occur during splicing
4. describe safety materials and procedures for handling fiber
5. describe proper cleaning techniques of connectors
6. explain the procedures to prepare a splice closure and a fiber-optic splice tray
7. discuss important considerations and specifications for proper installation of fiber-optic cable

(Continued)

RELATED COURSES

Students completing this course should then enroll in:

- » Fiber Testing and Maintenance
- » Advanced Technician

TRAINING FEATURES

- » Knowledge-based, broadband-and job-specific content
- » Highly illustrated and easy to read course materials
- » Curriculum advising
- » 24/7 lesson feedback and progress monitoring at www.jonesncti.com
- » Online testing

Visit www.jonesncti.com/coursepolicy.htm for important information on computer hardware/software requirements and student-to-student transfer and extension limitations



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COURSE OBJECTIVES *(Continued)*

8. discuss the differences in coarse wavelength division multiplexing, wide wavelength division multiplexing and dense wavelength division multiplexing technologies
9. list the steps in the setup of an optical transmitter
10. define and give examples of an optical power budget
11. discuss considerations for optical return path design
12. discuss the application and operation of centralized and distributed node powering

COURSE OUTLINE

1. Discovering Fiber Optics

Exploring fiber-optic fundamentals, understanding light sources and examining optical detectors

2. Introducing Fiber-Optic Networks

Exploring the basic HFC architecture, identifying applications and services and citing transmission standards

3. Investigating Optical Fibers and Their Properties

Identifying optical fiber types, evaluating fiber performance, examining fiber tolerances and handling fiber safely

4. Investigating Fiber-Optic Components and Connections

Examining fiber-optic cable, optical connectors, cable management panels and ancillary devices and examining optical splitters

5. Preparing Optical Fibers for Connection and Termination

Preparing to join optical splitters, working with splice closures, examining various splicing techniques and installing facility terminations

6. Introducing Construction Techniques

Identifying the importance of safety, examining construction practices for fiber-optic cables, performing aerial installations, underground installations and bringing fiber to the premises

7. Defining Fiber-Optic Transmission Systems and Topologies

Examining optical modulation techniques, multiplexing and demultiplexing optical signals and describing fiber-optic topologies

8. Transmitting and Receiving Optical Signals

Examining analog optical transmitters, digital optical transmitters, transmitting optical signals, examining optical receivers and using amplifiers, repeaters and regenerators

9. Understanding Fiber-Optic System Design

Reviewing outside plant variables, transmission system variables, reviewing system loss budgets, discussing dense wavelength division multiplexing and exploring system upgrades

10. Powering Fiber-Optic Nodes

Powering optical networks, examining outside plant power distribution and node equipment



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