

Hands-On

FTTx Outside Plant Design & Planning

On-Site or Virtual Live Instructor-led



Course Description

This extensive course can be delivered On-Site or our Virtual Live Instructor-led option and covers all the design options available for a FTTx design, how to analyze them economically and effectively to make an economical design decision.

Students will have a practical Real-World experience with our FTTx SME Instructor on the FTTx architecture, network design, deployment technology, and operational skills.

This extensive Virtual Instructor-Led course is designed for those new to outside plant design, or has experience in this type of design. It covers planning and engineering including understanding all the design options, understanding how to compare them and decide which is best based on your customer dynamics. Familiarity with standards and common practices in outside plant design for fiber will be discussed and fundamental design planning will be taught



- How to determine where to place feeder routes
- Boundaries
- Where to place all the hardware in the field
- And much more...

This course begins with some basic concepts such as outside plant components, loop transmission, safety codes, and aerial, buried, and underground design basics. It steadily builds to more advanced concepts and skills, including feeder and distribution cable design for fiber optics. Local loop facilities sometime referred to as "the last mile" are a critical and capital-intensive network component in delivering reliable and adequate telecommunications services to a local carrier customers.

The third day and the final day consist of fiber design exercises that put to work the theories and practical parts of the course. This is a full day of actual design work utilizing the methods taught in the class. Even if a person has never designed before, this individual will be able to design in subdivisions, apartments, and rural areas as well.

Students will also receive 4 fiber design cost models that they can use to examine fiber design alternatives. IF time permits, they will also have a chance to show the area they want to design in class so a design can be started for it.

In today's competitive markets, local loop facilities that are cost-effective, reliable and capable of accommodating changing customer needs are key to your organization's success.

Target Audience

The course is intended for construction managers, network designers, network planners, supervisors, and project managers that will be involved in deploying and maintaining FTTx networks.

Prerequisites

Basic fiber knowledge and basic OSP engineering helpful but not necessary.

Course Outline

Module I. General engineering information

- a. Course objectives
- b. What is expected from an engineer
- c. FTTx general information

Module II. FTTx Design Options

- a. General information about design options
- b. Home Run option
- c. Splitter Cabinet option
- d. Distributed optical split option

Module III. FTTH Design Options Comparisons

- a. Home Run versus splitter cabinet
- b. Home Run versus Distributed optical split
- c. Splitter cabinet versus Distributed optical split

Module IV. Take Rate Impact on Choosing a Design Option

- a. Take rate definition and relevance
- b. Splitter cabinet considerations

Module V. Density impact on FTTx Design Options

- a. High rise density
- b. Campus style apartment density
- c. Single family residential density
- d. Rural area density

Module VI. Fundamental Field Placement

- a. Where to place a node or cabinet
- b. How to determine economical number of feeder routes
- c. How to determine economical location of feeder routes
- d. Economical Distribution cable design
 - i. Cable layout
 - ii. Drop closure location
 - iii. Connectorized versus fusion spliced drops

Module VII. Other Design Considerations

- a. PON versus Active Ethernet
- b. Future upgrade design considerations
- c. Future proofing when sizing cables
- d. Design efficiency calculations
- e. Pseudo Cabinet design option

- f. Cost Models

Module VIII. FTTx Design Steps

- a. Home Run design steps
- b. Splitter Cabinet design steps
- c. Distributed Optical Split design steps

Module IX. FTTx Design Exercises

- a. FTTx design examples reviewed
- b. Design exercises- high rise, apartments, single family residential areas, and rural areas.

Delivery Method

Hands-On Instructor-Led with numerous exercises.

Equipment Requirements

(This apply's to our hands-on courses only)

BTS always provides equipment to have a very successful Hands-On course. BTS also encourages all attendees to bring their own equipment to the course. This will provide attendees the opportunity to incorporate their own gear into the labs and gain valuable training using their specific equipment.

Course Length

3 Days