ITU Centre of Excellence
Network for Africa

Fiber Optic Course

3rd – 7th August 2015

TRAINING WORKSHOP OUTLINE

Title:	FIBER OPTIC COURSE
Duration:	5 days
Date:	3rd – 7th August 2015
Venue:	Nairobi, Kenya
Mode of Delivery:	Face-to-Face
Tuition Fee:	USD 850

Course Overview

This course combines theory and hands-on activities. The course also introduces the participant to industry standards governing outside plant and premises fiber networks.

Objective

Participant will be able to effectively and efficiently design, install, terminate, and test multimode/singlemode fiber optic networks.

Target Audience

IT Managers, Telecommunication Engineers, Voice, Data and Video (VDV) and FTTx Technicians.

Core Areas Covered

1.   How Fiber works, advantages and disadvantages of optical Fiber
2.   Introduction to optical Fiber transmission systems
3.   Manufacture of optical Fiber cables
4.   Types, characteristics, classification and structure of optical Fibers
5.   Optical devices
6.   Optical Networks
7.   Safety precautions
8.   Optical Fiber installation methods
9.   Optical Fiber splicing and termination methods
10.   Optical Fiber link testing
11.   Optical power budgeting calculations
12.   Introduction to fiber-to-the-home.

13.   Trouble shooting and maintenance procedures

Methodology

Lectures, PowerPoint Presentation, and hands on practical in splicing, connectorization, termination and testing.

Course Outline

Day 1
- Introduction to optic fiber.
- History of Fiber Optics.
- Theory of light.
- How fiber works,
- Fiber specifications (geometry, attenuation, bandwidth).
- Frequency spectrum and multiplexing (WDM
- Fiber Optics Safety.
- Terms and Definitions.
- Hands-on Session: view samples of fibers and cables.

Day 2
- How fiber optic links work (transmitter, receiver, power budget)
- Fiber Optic communication networks.
- Networks (telecom, data, CATV, etc.).
- Fiber optic technology and manufacture of optic fiber cable
- Preliminary planning and detailed survey
  - Trenching
  - Ducts and cable laying
- Standards and Code compliance.
- Reading prints and specs.
- Planning the installation.
- Pulling cable (installation hardware, guidelines to pulling, practices.
- Documentation.

Day 3
- Types of Cables.
- Cable preparation
- Connectarization.
- Fusion and mechanical splicing
- Hardware (patch panels, splice closures, conduit, etc)
- Hands on:
  - Termination (one type, adhesive or prepolished/splice)

Day 4
- Continuity and tracing.
- Visual inspection of connectors and bare fiber.
- Loss with power meter and source.
- Hands on: Basic insertion loss testing with source and power meter,

Day 5

- Fiber optic design and PON
- PON
- FTTX
- Maintenance of a fiber optic link
- OTDR techniques: Trouble shooting and service restoration
- Questions and answers

For more information, please contact us on:
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