

# Fiber Optic Network Design Specialist

Students will study best practices and design alternatives for long-haul, metro, access and FTTH PON networks



<b>2024 Date/s</b> <b>27 Feb - 01 Mar - Available</b>	The logo for The Fiber Optic Association, Inc. (FOA) is circular with a blue border. The text "The Fiber Optic Association, Inc." is written along the top inner edge, and "Fiber Optic Design Specialist" is written along the bottom inner edge. In the center, the letters "FOA" are displayed in a large, blue, sans-serif font.	The logo for mictseta features a stylized blue and white circular emblem above the word "mictseta" in a blue, sans-serif font. Below the name is the accreditation number "ACC/2012/05/771" in a smaller, black, sans-serif font.
MetroFibre Networx (Pty) Ltd 298 Witch-Hazel Avenue Highveld Centurion		

**Cost:** R 8 800.00 p.p. incl. VAT  
**Duration:** 4-days  
**Time:** 08h30 to 16h30 daily  
**Bookings:** Please complete and email page-3 to:  
register@tripleplay.co.za  
...or register online at <http://www.tripleplay.co.za>

**Confirmation:** Registrations cannot be confirmed until payment is made in full

Should you have any questions about the course content, please feel free to contact:

Joe Botha

Mobile: +27 (0) 82 464 0386

Email: [joe@tripleplay.co.za](mailto:joe@tripleplay.co.za)

## GENERAL INFORMATION:

This is your chance to pose your questions, to review your solution choices, discuss upcoming technologies and benchmark ideas.

Optic Association Inc. (FOA) certification programs are without question the most recognized in the world today.

## WHO SHOULD ATTEND?

It is intended for contractors, installers, architects and engineers, project managers and all others who are involved with projects that include fiber optics.

## INSTRUCTIONAL METHOD:

The instructional methods used include lectures, demonstrations, and solving case studies.

Significant class time is devoted to designing hypothetical networks.

Students will be tasked with solving as many as 15 different design case studies set to challenge capabilities in analysing design rules and design alternatives.

Diversity in perspective sets the stage for a lively exchange of ideas where students can learn from teams or individuals supporting different outcomes.

## LEARNING OUTCOMES:

Design cost performance optimized Optical Communication solutions.

Design both traditional and next-generation optical networks to meet specified capacity, flexibility, and reliability requirements.

## COURSE CONTENT:

Students will study emerging technologies, design alternatives, configuration options, media selection criteria, key parameters affecting system performance, and the underlying theory required for total network design from initial planning to installation issues.

## Course Content - summary

### Day-1

Analog and Digital Transmission  
Transmission basics (SDH, PDH, E1, etc.)  
The Transport Network Infrastructure  
Circuit-Switched Networks  
Packet-Switched Networks  
Ethernet  
Voice, Data, Video and Bandwidth  
Physical Topologies  
Ultra-long, long-haul and backbones  
Optical amplifiers  
Add/drop multiplexers  
Wavelength Division Multiplexing  
Modulation schemes  
SM and MM fiber selection

### Day-2

Case studies  
Calculate optical loss and power budgets  
Calculate admissible distance  
Calculate allowable CD  
Calculate CD admissible fiber lengths  
CD compensation  
Calculate tolerable PMD coefficients  
Calculate PMD admissible fiber lengths

### Day-3

FTTH PON  
Case studies  
Transceiver selection  
Next-Generation Networks and convergence  
Splitter ratios - Centralized, Distribution and Home Run  
Design and Cost P2P and P2MP solutions  
FTTH Architectures  
Design Impacts  
Analog to Digital Video and IP Video Delivery  
RF Overlay and RFOG  
Bit rate maximizing

### Day-4

Wrap-Up and writing of the test

**Please complete the CFOSD course Registration Form below and submit for invoicing to:  
register@tripleplay.co.za**

**DELEGATE @ R8 800.00 incl. VAT:**

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Name:

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Surname:

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CFOT #:

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Telephone:

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Mobile:

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Email:

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Dietary Req:

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Name:

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Surname:

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CFOT #:

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Telephone:

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Mobile:

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Email:

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Dietary Req:

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Company Name:

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VAT Registration No.

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Postal Address:

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Contact Person:

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Telephone:

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Email:

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