Training Course Outline

ITU and China Academy of Information and Communications Technology

Title	The technology evolution and planning of broadband network
Modality	Online instructor-led
Level	Intermediate
Dates	16/10/2023 - 29/10/2023
Duration	14 days for course materials reading and watching with instructor-led through forum; 1 hour/day for 3-4 days live sessions (instructor-led); Extra 14 days till 12 November 2023 for finishing quizzes and assignment
Language	English
Region	World
Registration type	Application and selection
Registration deadline	15/10/2023
Training fees	Free
Description	This course will help the participants to know about the overall development status and experience of China's broadband network and universal service development status and experience; the introduction of different optical fiber broadband access technologies and technical solutions for fiber-to-the-room; the planning of FTTH network; management and operation of Massive Home Gateways; troubleshooting of FTTH networks.
Training topics	Wireless and fixed broadband

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Certification	Certificate
Code	23OI100195ASP-E

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1. TARGET POPULATION

This training is targeted at managers, engineers and employees from regulators, government organizations, telecommunication companies and academia, who are interested in understanding broadband technology development, planning and universal service development, etc. Other institutions and individuals that are interested in building their capacity related to broadband are also welcome to participate.

2. ENTRY REQUIREMENTS

The participants are expected to have basic knowledge of ICT, in particular fixed and broadband communication.

3. TRAINING OBJECTIVES

Upon completion of this course, participants will be able to:

- Outline the overall development status and experience of China's broadband network and it's practices of universal services;

- List the different optical fiber broadband access technologies and recognize their definition and composition;

- Describe the architecture of access fiber optic cable network and it's principles of planning and planning process;

- Repeat how to manage the architecture of Home Gateway remotely and how to apply the main network management protocals;

- Identify the failures in fiber-to-the-home networks, and outline how to assess the quality of fiber-to-the-home networks and services;

- Identify the technical solutions for fiber-to-the-room and high-quality indoor access solution based on optical/wireless convergence.

4. METHODOLOGY

Course Materials: The relevant course material will be made available on the course platform, which will include presentations and their videos of explanation. During every week, live sessions will be held, the tutors will brief or highlight some important parts of their course's presentations.

Online Discussion Forums: Participants are expected to participate actively in discussion forums on selected topics throughout the week. Tutors will respond to the posts and discuss with participants.

Chat Sessions: Online chat sessions with the tutor will take place 2-3 times during the two weeks' time. All participants are expected to join the chat sessions to interact with tutors. The specific time will be sent to participants in advance by tutors.

Quizzes: 2 mandatory online quizzes will be launched at the end of each week and required to submit before the announced deadline.

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Assignment: There will be a **mandatory assignment** at the end of the course, which is required to submit before the announced deadline.

5. ASSESSMENT AND GRADING

Besides the quizzes and the assignment, participants will be evaluated according to their substantive posts on the discussion forum and other course activities, reflecting both the quantity and quality of time spent on the course. The evaluation details and criteria for certificates areas follows:

Quiz1:	30%
Quiz2	30%
Individual Assignment	20%
Discussion Forum1	5%
Discussion Forum2	5%
Live and chat sessions	10%
Total Evaluation:	**100%**

A total score higher than 70% is required to obtain the ITU certificate.

6. TRAINING DETAILS & INSTRUCTIONAL APPROACH

Week	Sessions/Topics covered	Key learning points (detail learning outcomes)	Training activities details
Week 1	1.Development Status and Experience of China's Broadband Network	·The Overall Development Status and Experience of China's Broadband Network ·Broadband Universal Service Development Status and Experience	The participants are required to read and watch the course materials uploaded on the platform, participate live and chat zoom sessions, and interact with tutors and other participants on the forum. Quiz at the end of each week will be administered to learners to check their knowledge.
	2.Introduction to Optical Fiber Broadband Access Technology	·Definition and composition of optical fiber broadband network ·Comparison of different FTTx architectures ·Development and Evolution of xPON Technology ·Services and management of fiber broadband access	

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	3.Planning of FTTH Network	·Architecture of access fiber optic cable network ·Principles of Planning for Access to Optical Cable Networks ·Planning process and principles for accessing optical cable network ·Planning of Rural Optical Cable Networks	Tutors will be online to respond any questions raised by participants through forum or live sessions during each week.
Week 2	4. Management and Operation of Massive Home Gateways	·Remote Management Architecture of Home Gateway ·How to Apply OMCI and TR-069 ·Management Requirements for Smart Home Gateways ·Management and Operation solution of Smart Home Gateway	The participants are required to read and watch the course materials uploaded on the platform, participate live and chat zoom sessions, and interact with tutors and other participants on the forum. Quiz at the end of each week will be administered to learners to check their knowledge. Tutors will be online to respond any questions raised by participants through forum or live sessions during each week. The assignment will be launched at the end of second week.
	5. Troubleshooting of FTTH Networks	·Failures in fiber-to-the-home networks ·Diagnosis and location of ODN faults ·Quality assessment of fiber-to-the-home networks and services ·AI-assisted FTTH Network Diagnosis System	
	6. Fiber-to-the-Room Technology	·Requirements and Application Scenarios of Fiber to the Room ·Technical solutions for fiber-to-the-room ·ODN for Fiber-to-the-Room ·High-quality indoor access solution based on optical/wireless convergence	

7. TUTORS/INSTRUCTORS

Name of tutor(s)/instructor(s)	Title	Contact details
TBC		

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8. TRAINING COURSE COORDINATION

Course coordinator	ITU coordinator
Name: WANG Ying Title: Senior Engineer Email address: wangying@caict.ac.cn	Name: Sean Doral Title: Programme Officer Email address: sean.doral@itu.int

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