



ITU Centres of Excellence Network for CIS
Institute of Electronics and Telecommunications (IET)
Face-to-face Training Course on
Fiber-Optic Communication Lines: Modern Instruments and Tools
Bishkek, Kyrgyz Republic
3-7 June 2019

COURSE OUTLINE

COURSE DESCRIPTION

Title	Fiber-Optic Communication Lines (FOCAL): Modern Instruments and Tools
Objectives	<ul style="list-style-type: none">• This training course aims to introduce participants with the organization of fiber-optic communication lines, in particular with experiences in designing, construction, and operations of modern broadband fiber-optic communication networks, as well as to practically demonstrate what measurements are made in industries.• The training will allow participants to personally contribute to the implementation and development of the fiber-optic broadband access in the future.
Dates	3-7 June 2019
Duration	5 days
Registration deadline	2 June 2019
Training fees	USD 95
Course code	19WS24286CIS-R

LEARNING OUTCOMES

Upon completion of the training, the participants will:

- have a notion of the experiences in and plans of construction of modern broadband fiber-optic access networks in different countries and of the deployment of the fiber-optic subscriber access network using PON Metro Ethernet, PON with DWDM, CWDM in Kyrgyz Republic;

- have a notion of the development of fiber-optic communication systems and ITU-T recommendations regarding assignment of wave lengths used in WDM systems;
- be able to use different solutions for deployment of broadband fiber-optic access equipment;
- possess skills to design, construct, and operate communication networks on the basis of fiber-optic communication networks with DWDM, CWDM;
- possess skills to work with optical fiber, lay out and suspend fiber-optic cables, terminate and weld optical fiber, as well as to work with control and measuring instrumentation of installation personnel.

TARGET POPULATION

The course is targeted at installers, engineering and technical personnel, leading specialists, top and middle-ranking managers of telecommunication companies and ICT engineers. The course may be also of interest to employees of communication administrations dealing with the development and deployment of fiber-optic access networks. The participants are expected to have an understanding of technical communication principles.

TUTORS/INSTRUCTORS

TUTORS / INSTRUCTORS	CONTACT DETAILS
Mr. Igor Zimin Candidate of Science (Engineering), Head, Telecommunications Department, IET	Email: igorzimin777@mail.ru
Mr. Kubanychbek Murzakmatov Deputy Head, Telecommunications Department, IET	Email: murzakmatov.k@gmail.com

EVALUATION

In addition to the evaluation based on the results of the training, participants will be evaluated depending on how actively they participated in the sessions and other training activities, i.e. based on quality and quantity index of time they spent to complete the training.

TRAINING SCHEDULE AND CONTENTS / AGENDA

3 June 2019, Monday	Topic/Events
13:30-14:00	Registration of participants
14:00-16:00	<ul style="list-style-type: none"> • Lesson 1: key features and types of optic fiber. Types and constructions of optic cable. FTTx fiber-optic access technologies and components.
16:00-16:30	Coffee break
16:30-19:00	<ul style="list-style-type: none"> • Practical exercise 1 on fiber-optic cable laying: <ol style="list-style-type: none"> 1. cable laying inside rooms; 2. cable laying outside rooms. • Lesson 2: ITU-T recommendations regarding assignment of wave lengths used in WDM systems.

4 June 2019, Tuesday	Topic/Events
14:00-15:00	<ul style="list-style-type: none"> Lesson 3: Special aspects of prospecting for designing FOCAL objects for fiber-optic electricity transmission line and networks. Key feed data, key specification documents.
15:00-16:00	<ul style="list-style-type: none"> Practical exercise 2: Terminating input devices (ODF), different types of optic umbilical connections. MCO mounting construction and technology for communication mainstream, local, and city lines
16:00-16:30	Coffee break
16:30-19:00	<ul style="list-style-type: none"> Practical exercise 3: <ol style="list-style-type: none"> Optic cable splicing and preparation works for mounting fiber optic to splice cases; Optic cable splicing and preparation works for mounting fiber optic to optical distribution frames.
5 June 2019, Wednesday	Topic/Events
14:00-15:00	<ul style="list-style-type: none"> Practical exercise 4: FOCAL construction on the basis of suspension and self-supporting cable.
15:00-16:00	<ul style="list-style-type: none"> Practical exercise 5: Equipment for fiber optic welding, its mode of functioning and features.
16:00-16:30	Coffee break
16:30-19:00	<ul style="list-style-type: none"> Practical exercise 6: <ol style="list-style-type: none"> Technology of fiber optic mounting using electroarc welder; Technology of fiber optic mounting using mechanical connectors.
6 June 2019, Thursday	Topic/Events
14:00-15:00	<ul style="list-style-type: none"> Practical exercise 7: Key features of divided and fixed optical fiber splices, extinction and backward reflection indexes.
15:00-16:00	<ul style="list-style-type: none"> Practical exercise 8: <ol style="list-style-type: none"> FOCAL near end crosstalk measuring technique using optic power meter. Near end crosstalk measuring in optical cord and FOCAL dummy.
16:00-16:30	Coffee break
16:30-17:30	<ul style="list-style-type: none"> Practical exercise 9: Near end crosstalk measuring technique using optic power meter.
17:30-19:00	<ul style="list-style-type: none"> Practical exercise 10: <ol style="list-style-type: none"> Mode of optical reflection meter functioning;

	2. Measurements in FOCAL construction and commissioning.Types of conjunction and their reflection in the fiber trace.
7 June 2019, Friday	Topic/Events
14:00-15:00	<ul style="list-style-type: none"> Lesson 4: Technologies of remote and exact identifying the FOCAL fault points.
15:00-16:00	<ul style="list-style-type: none"> Practical exercise 11: Analysis of fiber trace selected at different section of the network.
16:00-16:30	Coffee break
16:30-18:00	<ul style="list-style-type: none"> Final test
18:00-18:30	<ul style="list-style-type: none"> Official closure

METHODOLOGY

The training will include Instructor-led presentations, case studies, group exercises and assignments.

All necessary materials for all events will be given at the first day of the event by the training tutor.

COURSE COORDINATION

<p>Course coordinator: Ainura Sadyrbaeva Chief Specialist Advanced Training Faculty Institute of Electronics and Telecommunications Email: sad.ainura@mail.ru</p>	<p>ITU coordinator: Farid Nakhli Programme Officer, Regional Office for CIS Region Email: farid.nakhli@itu.int</p>
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REGISTRATION AND PAYMENT

ITU Academy portal account

Registration and payment should be made online at the ITU Academy portal.

To be able to register for the course you **MUST** first create an account in the ITU Academy portal at the following address: <https://academy.itu.int/index.php/user/register>.

Training registration

When you have an existing account or created a new account, you can register for the course online at the following link:

<https://academy.itu.int/training-courses/full-catalogue/fiber-optic-communication-lines-focal-modern-instruments-and-tools>

You can also register by finding your desired course in our training catalogue <https://academy.itu.int/index.php/training-courses/full-catalogue>.

Payment

1. On-line payment

A training fee of USD 95 per participant is applied for this training. Payments should be made via the online system using the link mentioned above for training registration at: <https://academy.itu.int/training-courses/full-catalogue/fiber-optic-communication-lines-focal-modern-instruments-and-tools>

2. Payment by bank transfer

Where it is not possible to make payment via the online system, select the option for offline payment to generate an invoice using the same link as above. Download the invoice to make a bank transfer to the ITU bank account shown below. Then send the proof of payment/copy of bank transfer slip and the invoice copy to Hcbmail@itu.int and copy the course coordinator. **All bank transaction fees must be borne by the payer.**

Failure to submit the above documents may result in the applicant not being registered for the training.

3. Group payment

Should you wish to pay for more than one participant using bank transfer and need one invoice for all of them, create an account as **Institutional Contact**. **Institutional Contacts** are users that represent an organization. Any student can request to be an institutional contact or to belong to any existing organization.

To do this, head to your profile page by clicking on the “**My account**” button in the user menu. At the bottom of this page you should see two buttons:

- a. If you want to **become an institutional contact**, click on the “**Apply to be an Institutional Contact**” button. This will redirect you to a small form that will ask for the organization name. After you fill the name of the organization you want to represent, click on “**continue**” and a request will be created. An ITU Academy manager will manually review this request and accept or deny it accordingly.

If you want to **belong to an existing organization**, click on the “**Request to belong to an Institutional Contact**” button. This will redirect you to a small form that will ask you to select the organization you want to join from an organization list. After you select the correct organization, click on “**continue**”, a request will then be created. The Institutional Contact that represents that organization will manually accept or deny your request to join the organization.

ITU BANK ACCOUNT DETAILS:

Name and Address of Bank:	UBS Switzerland AG Case postale 2600 CH 1211 Geneva 2 Switzerland
Beneficiary:	Union Internationale des Télécommunications
Account number:	240-C8108252.2 (USD)
Swift:	UBSWCHZH80A
IBAN	CH54 0024 0240 C810 8252 2
Amount:	USD 95
Payment Reference:	CoE-19WS24286CIS-R-P.40594.1.03

4. Other method of payment

If due to national regulations, there are restrictions that do not allow for payment to be made using options 1 & 2 above, please contact the ITU coordinator for further assistance.