



**ITU-ITSO online training on Satellite Communications and Radio Regulations
Procedures for America Region
31 May – 11 July 2021**

COURSE OUTLINE

Course Title	ITU/ITSO online training on Satellite Communications and Radio Regulations Procedures for America Region.
Course Description	Under close cooperation between the ITSO and ITU, the online basic course program “Satellite Communications and Radio Regulations Procedures” has been developed and put in place with the primary objective of raising awareness amongst individuals, organizations and institutions on policies, regulations, licensing frameworks and technical aspects associated with the provision of satellite communications services. This program is also an essential component of ITSO Capacity Building Initiative, which has been supported by member states and various partnerships and is intended to offer to member states an access to basic capabilities and necessary tools to support the continuous development and effective use of satellite communications services.
Course Date	31 May – 11 July 2021
Course Duration	6 weeks
Registration Deadline	24 May 2021
Course code	21OI26501AMS-S

Learning outcomes

Upon completion of this training course, learners will gain an understanding of the key aspects of:

- Basics of satellite communications;
- Policy and regulatory guidelines for satellite services;
- Radio Regulations related to satellite orbit and spectrum resources;
- Network planning and link budget analysis;
- Earth station and VSAT system;
- Radio Regulations related to earth station coordination and registration.

Target Population

This program is a standard training course with three main areas of concentration: POLICY, REGULATION and TECHNICAL CONCEPTS that address to regulators, operators and technicians in the satellite communications sector. It covers a wide range of issues relating to satellite communications and regulatory aspects, including the role of regional and international satellite communications organizations.



Policy Makers and Regulators

- BASIC OF SATELLITE COMMUNICATIONS
- POLICY ISSUES & REGULATORY FACTORS
- PROCUREMENT & COST CONSIDERATIONS



Satellite Coordination & Registration Procedures

- ORBIT SPECTRUM ALLOCATION
- COORDINATION & NOTIFICATION PROCEDURES
- BSS & FSS PLANS & LIST
- ELECTRONIC SUBMISSIONS & APPLICATIONS OF ITU-BR SOFTWARE PACKAGES



Technical & Regulatory

- BASICS OF SATELLITE COMMUNICATIONS
- POLICY & REGULATORY GUIDELINES FOR SATELLITE SERVICES
- NETWORK PLANNING & LINK BUDGET ANALYSIS

Course Tutor/Instructors

The course will be tutored by:

- **Mr. Jesus Rivera**, ITSO Tutor, Email: jrrp72@gmail.com
- **Mr. Alvaro de Vega**, ITU Tutor, Email: Alvaro.devega@itu.int

Evaluation

The assessment of the participants shall be based on the time spent on the training and the following parameters:

Evaluation Parameter	Weightage
Exam	60%
Attendance	10%
Participation (group work, quizzes)	30%
Total	100%

Important: A passing mark of 60% is required for obtaining a completion certificate.

Methodology

The course on “Satellite Communications and Radio Regulations Procedures” is an online course with a six-week length. It uses various educational methods and tools to meet the needs of learners in online education.

The course is structured around six Modules. Each learner should watch the recorded video for each of these Modules. The reading materials accompany the videos and can help learners to follow all topics covered.

After watching the video, each learner needs to read the accompanying documents (such as PowerPoint presentations and articles, etc.) and answer questions on a number of topics under the Module. These questions will also serve as guidance for discussion.

In addition, there are discussion forums for each Module, where the participant should answer questions on a number of topics under the Module. These questions will also serve as guidance for discussion.

Conference call discussions are offered (one conference call per Module), during which the tutor will review the topics covered under the Module and answer learners’ questions. The Conference Calls will take place every Thursday at 16:30 (Geneva time, GMT+2) and will have a duration of 1 hour.

After the end of the Module, the learner needs to access the quiz regarding this Module, which consists of a set of multiple-choice questions, and the learner needs to reach above 60% of correct answers. Upon successful completion of the course and the feedback form, participants will be able to download certificates of achievement directly from the platform.

Course Coordination

Mr. Rodrigo Robles Programme Officer ITU Americas Regional Office E-mail: Rodrigo.Robles@itu.int	Mr. Pablo Palacios Programme Officer ITU Area Office Chile E-mail: Pablo.Palacios@itu.int
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Program Contact Information

ITSO contact information:

- Contact point: Ms. Aline Deffry
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- IT system support: Mr. Paul Sapountzakis
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- Coordinator: Mr. Xiaoyang Gao
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ITU contact information:

- ITU Academy platform contact point:
Ms. Elena Stankovska Castilla
Email: elena.stankovska-castilla@itu.int
- ITU Program Coordinator: Mike Nxele
Email: mike.nxele@itu.int

Feedback by Learners

In order for us to continuously monitor and improve the capacity building online course program, we kindly ask learners to fill out questionnaire as candidly and comprehensively as possible. This feedback is needed for learners to submit in time before the close of the program.

Modules and Contents

Each module is intended to correspond to one week of the course.

A Conference call discussion by Zoom will be arranged for each Module, and then participants need to complete a quiz for the Module.

WEEK 1	<p>MODULE 1 – COMMUNICATION SATELLITES</p> <ul style="list-style-type: none"> i. Birth of Satellites and Satellite Launches ii. Orbits iii. Radio Waves iv. Signal, Noise and Spectrum v. Modulation vi. Propagation vii. Space and ground segment <ul style="list-style-type: none"> ✓ Transponder ✓ Antenna and Polarization ✓ Level, Gain and Loss ✓ Footprint ✓ Earth Stations in Motion ✓ Satellite Links
WEEK 2	<p>MODULE 2 – POLICY, INSTITUTIONAL AND REGULATORY FRAMEWORK</p> <ul style="list-style-type: none"> i. UN System and ITU ii. International Legal Framework: the Radio Regulations and World iii. Radiocommunication Conferences (WRC) iv. The Role of National Administrators and Regional Coordinating Agencies v. ITSO and other Specialized Agencies vi. Satellite Operator and Satellite Industry vii. Evolving Technologies and Technology Trends

WEEK 3	<p>MODULE 3 – ORBIT AND SPECTRUM RESOURCES</p> <ul style="list-style-type: none"> i. Satellite Services and Frequency Bands ii. Access to Satellite Orbit/Spectrum Resources iii. Coordination and Notification Mechanisms iv. BSS and FSS Plans v. BR IFIC (Space Services), Preface and ITU website for Space Services vi. Harmful Interference Cases
WEEK 4	<p>MODULE 4 – SATELLITE COMMUNICATION NETWORKS</p> <ul style="list-style-type: none"> i. Network Topologies ii. Access Schemes iii. C-Band vs Ku-Band iv. Internet Traffic over Satellite Networks v. Coding and Modulation vi. Introduction to Network Planning and Link Budget Analysis
WEEK 5	<p>MODULE 5 - EARTH STATION AND VSAT SYSTEM</p> <ul style="list-style-type: none"> i. ANTENNA <ul style="list-style-type: none"> ✓ Types ✓ Parameters ii. UPLINK <ul style="list-style-type: none"> ✓ Modulation ✓ Up-converters ✓ Transmitters ✓ Inter Facilities Link iii. DOWNLINK <ul style="list-style-type: none"> ✓ LNA/LNB ✓ Down-converters ✓ Inter Facilities Link ✓ Demodulation
WEEK 6	<p>MODULE 6 – EARTH STATION COORDINATION AND REGISTRATION</p> <ul style="list-style-type: none"> i. Introduction to BR Space Software ii. Demonstration of Earth Station Coordination and Registration iii. Practical Exercise using Offline Earth Station Coordination Software (GIBC) iv. Comments to Special Sections v. Exercise on commenting with SpaceCom Software

Participation fees

This course is being offered **free** of charge to participants.

Registration

ITU Academy portal account

Registration 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>.

Course registration

When you have an existing account or created a new account, you can register for the course online at the following link: [ITU ACADEMY](#).

Please select “Apply here” and your application will be submitted. It will then be reviewed and either accepted or rejected. ***Please note that seats for this training are limited to 60.***

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