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**ITU**  
**Online Training Course on**  
**INTRODUCTION TO SPECTRUM MANAGEMENT**

**TRAINING COURSE OUTLINE (ONLINE)**

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**COURSE DESCRIPTION**

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Title	Introduction to Spectrum Management
Objectives	To develop an understanding of the fundamentals of spectrum management and establishing a spectrum management regulatory framework, by building knowledge on general concepts on spectrum management, international regulation, recommendations, processes for each service such as mobile, TV broadcasting, Satellite etc.
Dates	21 January 23 until 21 December 2023
Duration	Self-paced
Registration deadline	<b>22 December 2022</b>
Training fees	Free
Course code	23OS100145MUL-E

**DESCRIPTION OF THE TRAINING COURSE**

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Wireless technology now drives the development and diversification of information and communication services for government, industry, and the public. In line with the rapid growth of many wireless services and applications, efficient management of radio spectrum has become more and more important for the socio-economic development of a country. The radio spectrum is a scarce natural resource and foundation for all the new mobile applications, and how efficiently use this crucial asset could decides the flourishing or languishment of new wireless service industries in a country.

This course will equip all participants with knowledge on spectrum management regulatory framework, general concepts of radio communication, spectrum management processes and related recommendations for mobile, TV broadcasting, Satellite etc, and other topics like EMF on spectrum management.

## LEARNING OUTCOMES

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

- Understand the fundamentals of spectrum management and establish a spectrum management regulatory framework.
- Gain an understanding of the role of ITU, region, and National Regulatory Authorities in spectrum management.
- Build spectrum management knowledge on international regulations, recommendations, principles, and processes for various services.
- Understand the guidelines on EMF human exposure limits and other related topics to spectrum management.

## TARGET POPULATION

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The target audience for this course is incoming and emerging ICT/Telecommunications regulators and policymakers.

## ENTRY REQUIREMENTS

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Basic knowledge of spectrum engineering or telecommunications

## TRAINING COURSE CONTENTS

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The topics covered in this module are:

- 1. Introduction to Spectrum Management**
  - Radio spectrum overview
  - Why is spectrum management important
- 2. Technical concepts on radio communication**
  - Radio spectrum physical phenomena
  - Propagation model and recommendation of radio wave
  - Digital modulation techniques and network design with interference analysis
- 3. Spectrum management regulatory framework**
  - Spectrum management regulation
  - Regional cooperation structure and functions
  - Role of National Regulatory Authority (NRA)
  - Spectrum authorization (licensing) principles and processes
- 4. Spectrum management on various services**
  - Radio and TV Broadcasting Services
  - Land Mobile Services
  - Fixed Services
  - Satellite Communication Services
  - Licensed-exempt Applications
- 5. Frequency coordination and other topics on spectrum management**
  - Cross-border frequency coordination principles and international agreements
  - Role of radio monitoring
  - EMF human exposure limits and principles

## METHODOLOGY (Didactic approach)

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This course will be delivered using self-paced online learning. The course is delivered using interactive modules posted on the course page and selected reference materials that the participants can study for further insights.

## **EVALUATION AND GRADING**

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Students performance in this course will be determined with:

- Final Exam will be assessed by % of correct answers from a set of 15 questions

The final quiz will account for 100% of the total course score. However, participants are required to go through all the materials to reach to the exams.

Total score higher than 60% is required to obtain ITU badge

## **TRAINING COURSE COORDINATION**

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**Course coordinator on course content:**

Email address: fns@itu.int

**Course coordinator on technical issues:**

Email address: hcbmail@itu.int