

# LTE Air Interface

COURSE OUTLINE



**Course Details****Name: LTE Air Interface****Course Details**

5G LTE training is latest training which Premcell is providing. 4G training is useful for engineers working other areas such as core network, transport, etc. as a way to get a first overview on LTE networks. 4G course is for those engineers who work in areas such as core network, transport, etc as a way to get a first overview on LTE networks.

**Target Audience:** This training is targeting engineers who wish to acquire knowledge on the basics of LTE Air Interface. This training is theoretical, thus it is also useful for engineers working other areas such as core network, transport, etc. as a way to get a first overview on LTE networks.

**Training Objective**

- Understand the basics of LTE air Interface.
- Understand OFDM, OFDMA and SC-FDMA.
- Understand the LTE channel structure
- Understand MIMO
- Understand the basics of LTE Advanced.

**Duration of Training:** 3 Days**Max Number of Participants:** 15

**Prerequisite:** General knowledge of mobile communication networks, specifically their Air Interface.

**List of Modules**

- LTE Overview and Architecture
- LTE Air Interface Basics
- LTE Air Interface Protocols and Radio Channels
- LTE MIMO
- LTE Advanced

## Module List Detailed

### Module 1: LTE Overview and Architecture

Topics discussed in this module are listed below:

- Motivation to develop LTE/SAE.
- LTE/SAE requirements and key features.
- LTE Architecture

### Module 2: LTE Air Interface Basics

Topics discussed in this module are listed below:

- OFDM basics
  - OFDM Multiple Access
  - Radio Access Principles
  - LTE Radio Channels
- MIMO

### Module 3: LTE Air Interface Protocols and Radio Channels

Topics discussed in this module are listed below:

- Physical Layer
  - Aspects LTE Layer 2
- LTE Radio Channels
- Physical Channels Resource Allocation

## **Module 4: LTE MIMO**

Topics discussed in this module are listed below:

- Introduction to Multi-Antenna systems
- MIMO Physical Channel processing system

- LTE MIMO Transmission Modes

## **Module 5: LTE Advanced**

Topics discussed in this module are listed below:

- LTE Advanced Requirements
- Carrier Aggregation
- MIMO Enhancements
- Coordinated
- Multipoint Relays
- Heterogeneous Networks