



LTE for Mobile 4G Broadband

❖ **Course Objectives**

- To discuss the basics of wireless communications.
- To discuss the basics of computer networks.
- To study the basics of WiMAX networks.
- To study the basics of LTE systems.
- To simulate LTE systems.
- To implement LTE systems.

❖ **Type of Delivery**

Instructor-Led Training

❖ **Duration**

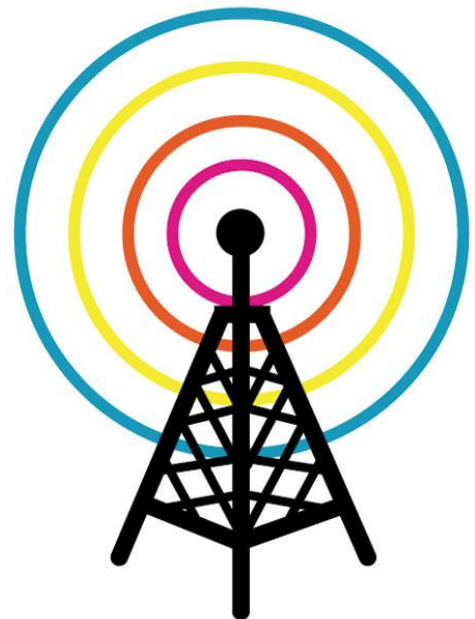
5 Weeks – 3 Sessions per week
3 hours/ Session

❖ **Training Benefits**

- Professional Instructor
- Professional Presentations
- Software Simulation
- Software Emulation
- Exam & Final Project
- CEUs certificate for Professional Engineers
- Special discount for IEEE members
- Internationally recognized certificate

❖ **A few of the covered topics are**

- Introduction
- Network architecture and protocols
- Downlink access
- Single-carrier FDMA
- Reducing uplink signal Peakiness
- Transmit diversity
- MIMO spatial multiplexing
- Channel structure and bandwidths
- Cell search and reference signals
- Random access
- Channel coding
- Scheduling, link adaptation and hybrid ARQ
- Power control
- Uplink control signaling
- Downlink control signaling
- Inter-cell interference control
- Single frequency network broadcast
- Spatial channel model
- LTE performance verification



Please refer to course catalogue to see full covered topics.

❖ Target Audiences

This course is Suitable for Communications Engineering students at level 3 and 4 and newly admitted engineers. It is suitable also for Computer Engineering students at level 3 or 4 or newly admitted engineers.

❖ Prerequisites

- Analog Communications.
- Digital Communications.
- Basics of Computer Networks.
- Matlab Fundamentals

❖ Course certification

Upon successfully completing course assessment, quizzes, final project and exam, you will be eligible to get your internationally recognized certificate. This course is offering CEUs from IEEE and IACET for more information: www.ieee.org/partners

❖ About the Instructor

This course is delivered by **Dr. Mohamed Abdel Azim**. He is currently an assistance professor at Mansoura University. He has wide experience of teaching Electronics and Communications Engineering courses in various Universities in Egypt.

<http://mansvu.mans.edu.eg/cv/en/showcv.php?id=5063>

❖ Course References

- [1] EN 302 304 v1.1.1 ETSI, DigitalVideo Broadcasting (DVB); Transmission System for Handheld Terminals (DVB-H).
- [2] Chari, M., Ling, F., Mantravadi, A., Krishnamoorthi, R., Vijayan, R., Walker, G. K. and Chandhok, R., “FLO physical layer: an overview,” *IEEE Transactions on Broadcasting*, vol. B-53, no. 1, Mar. 2007.
- [3] ETS 300 401, Radio Broadcasting Systems; Digital Audio Broadcasting (DAB) to Mobile, Portable and Fixed Receivers.
- [4] 3GPP2 C.S-0054-A, cdma2000 High Rate Broadcast–Multicast Packet Data Air-Interface Specification.
- [5] 3GPP2 C.S0002-D, Physical Layer Standard for cdma2000 Spread Spectrum Systems –Revision D.