

Telecoms & Tech Academy

LTE TECHNOLOGY

Format:
Online Academy

Duration:
7 Modules



Brought to you by

informatech

LTE TECHNOLOGY

COURSE OVERVIEW

The delegate attending this course will gain a comprehensive appreciation of the architecture and operation of the LTE system including the OFDM based radio interface.

Firstly, a comprehensive helicopter view of LTE is presented in order to provide context for the topics covered as the course progresses. The capabilities and limitation of LTE are examined as well as the overall business implications of LTE deployment (in the light of the evolution of mobile broadband).

The radio interface is based on OFDMA and supports advanced features such as MIMO and interference management. These concepts are explained, as well as related topics such as spectrum usage and deployment. The architecture of release 8 LTE network (SAE) is explained and the functions of each network node, MME S-GW, P-GW, eNB and interfaces X2 and S1 are discussed. The Evolved Packet Core (EPC) concepts and implementation issues are developed to ensure a comprehensive understanding of basic operation, roaming and interworking with 3GPP and non-3GPP systems.

LTE service provision, including voice options and VoLTE, is discussed and used to tie together the capabilities and procedures required of both the radio and core network components. Throughout, typical procedures are used to consolidate overall understanding of LTE.

WHAT WILL YOU LEARN

Attending this course will empower you to develop or be able to:

- Gain a comprehensive understanding of LTE technology and LTE network operations and the impact that LTE deployments have on the operator
- Gain an insight into the OFDMA radio interface, understand its basic operation, benefits and limitations.
- Analyse the network architecture, the functions of the network nodes, the protocols and operation of the system interfaces.
- Determine best strategic approach for LTE implementation, taking in to account existing mobile broadband technologies and spectrum issues.
- Focus on the capabilities and requirements of LTE in respect of service delivery.
- Appreciate the different options for voice support in LTE, including CS-Fallback and VoLTE.
- Gain a thorough "big picture" understanding of all elements of LTE and SAE/EPC
- Gain access to the latest research from Informa Telecoms and Media analysts regarding the current status of the LTE market and current deployments.
- Build confidence to make decisions on technology implementation and procurement that are commercially viable, minimise risk, and in line with the strategy and goals of the wider organization.

PROGRAMME MODULES

- LTE Overview
- The Need for LTE & Market Dynamics
- LTE Radio Interface
- Service Architecture Evolution (and the Evolved Packet Core)
- Service Provision in LTE
- 4G—LTE Advanced and Beyond
- Annex: LTE Deployment

COURSE INSTRUCTOR

Having begun his career as a fully qualified Communications Officer and Senior Engineer with Cable and Wireless, Dave McNally now oversees the Telecoms & Tech Academy's suite of advanced technology programmes which includes 5G, LTE and WiMAX. His huge experience and knowledge, as well as his flexible and dynamic presentation skills means he is also a very capable Programme Director on a range of telecoms management programmes.

ONLINE ACADEMY

WHAT IS AN ONLINE ACADEMY COURSE?

Online Academy is a new online, interactive and engaging education tool designed to maximise learning for professionals with busy schedules and/or small training budgets.

The online academy brings alike professionals together and gives you the opportunity to share ideas and questions via the discussion forum creating your own professional community. Our on-demand feature means the content is available as and when you need it allowing greater flexibility to your professional development and learning.

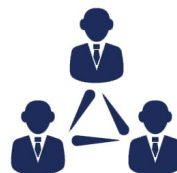
Over 5 weeks participants will learn through:

- 7 modules and a business simulation, split up into multiple bitesize recorded videos
- Revisit the content with unlimited access to all the materials for 2 months
- Access the discussion forum to interact with other students
- Direct contact with the trainer through the forum during the period the course is running
- Additional content such as research materials and white papers available to download

BENEFITS OF ONLINE ACADEMY



Boost your resume – with self-paced learning and advance your career with specialist technical skills.



Become part of a professional learning community – discuss any problems with students and the Course Instructor



Convenience and flexibility – Learn whenever you want – from the comfort of your home or office



Cost effective – save on travel expenses, reduce unproductive down time and no crowded airports



Enabled for mobile – make use of downtime with easy bite sized chunks of learning

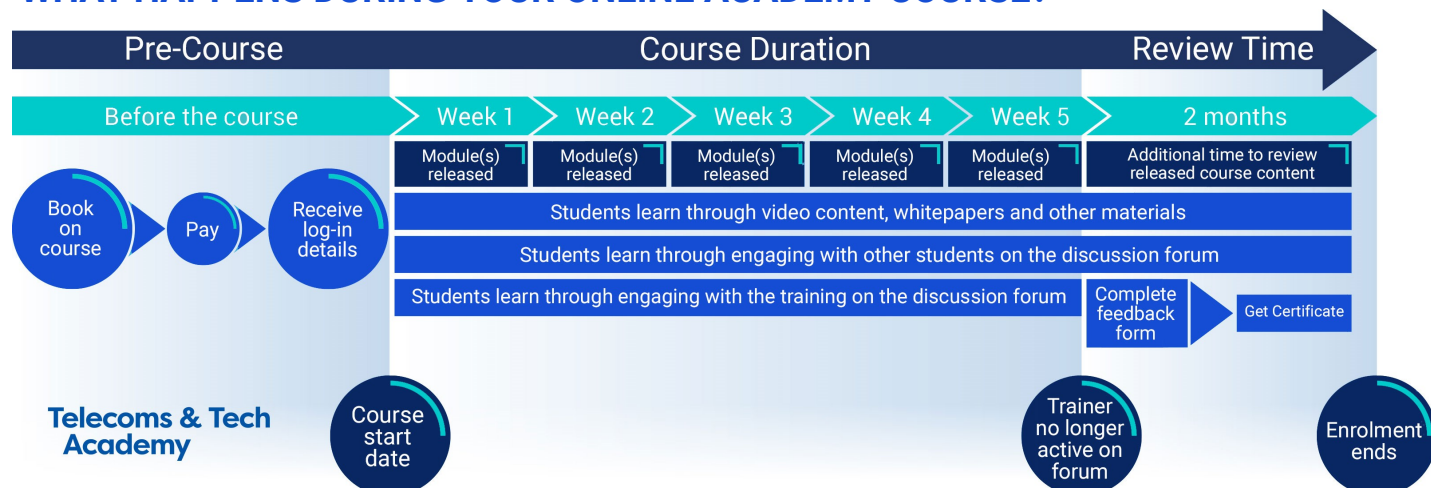


Grow as a team – with multiple licenses your team can access the course and learn together, no matter where they are in the world



Learn and apply right now – immediately implement what you learn during the course

WHAT HAPPENS DURING YOUR ONLINE ACADEMY COURSE?



PROGRAMME MODULES

LTE OVERVIEW

- LTE Features and Performance
- LTE Architecture
- LTE Radio Interface
- MIMO
- LTE Services and Voice
- Spectrum for LTE
- Deployment Benefits of LTE
- Cost Factors

THE NEED FOR LTE & MARKET DYNAMICS

- Global Mobile Broadband Market Trends
- Subscriptions
- User Trends
- Technologies
- Challenges
- The Role of LTE
- Drivers & Growth
- Positioning & Success Criteria
- Commitments
- Factors Influencing Revenues
- ARPU Forecasts
- Service Revenues
- Roaming
- How the Industry Sees LTE – Informa Surveys
- Rationale
- Timing
- Services & Apps
- Differentiation & Pricing

LTE RADIO INTERFACE

- Key Concepts & Performance
- Multiple Access in LTE – OFDMA and SC-FDMA
- Organising the Information – Channels, Frames and Physical Mapping
- Performance Improvement
- MIMO and Advanced Antenna Techniques
- Summary

SERVICE ARCHITECTURE EVOLUTION (AND THE EVOLVED PACKET CORE)

- Introduction to SAE and the EPC
- LTE terminology
- Evolution to 3GPP Release 10
- The need for an IMS
- eNB interfaces to the EPC
- Objectives and advantages of the EPS
- EPC architecture and interfaces
- Architecture functionality
- EPS bearers and bearer types
- QoS mechanisms
- S1-flex and pool areas
- Interworking mechanisms
- SAE Security

SERVICE PROVISION IN LTE

- LTE Voice Service Options
- Circuit Switched Fall Back (CSFB)
- VoLTE (Voice over LTE)
- Billing and Charging Mechanisms
- Online and Offline Charging
- PCC (Policy Control & Charging)
- Non-Voice Services and Applications

4G – LTE ADVANCED AND BEYOND

- Evolution to 4G
- IMT and 4G
- 4G Technologies LTE Advanced
- 4G Services, Applications and Devices

ANNEX: LTE DEPLOYMENT

- Evolutionary Paths to LTE and LTE Advanced
- Radio Planning Issues
- Spectrum Usage
- Interference
- Conformance

About Telecoms & Tech Academy

Telecoms & Tech Academy, part of Informa Tech is a leading training partner to the telecoms, media and technology (TMT) industries, having trained more than 30,000 professionals and 500 businesses globally.

We were borne out of the telecoms industry and understand the challenges the sector has been facing. Our training portfolio continues to evolve to help address new and emerging skills gaps faced by telecoms & tech businesses.

Our In-Company Solutions

Expert insight, delivered in a format to suit your needs, to enhance knowledge and drive performance in your team. Our learning & development consultants will work closely with your team to establish your unique business needs and define success measurements.