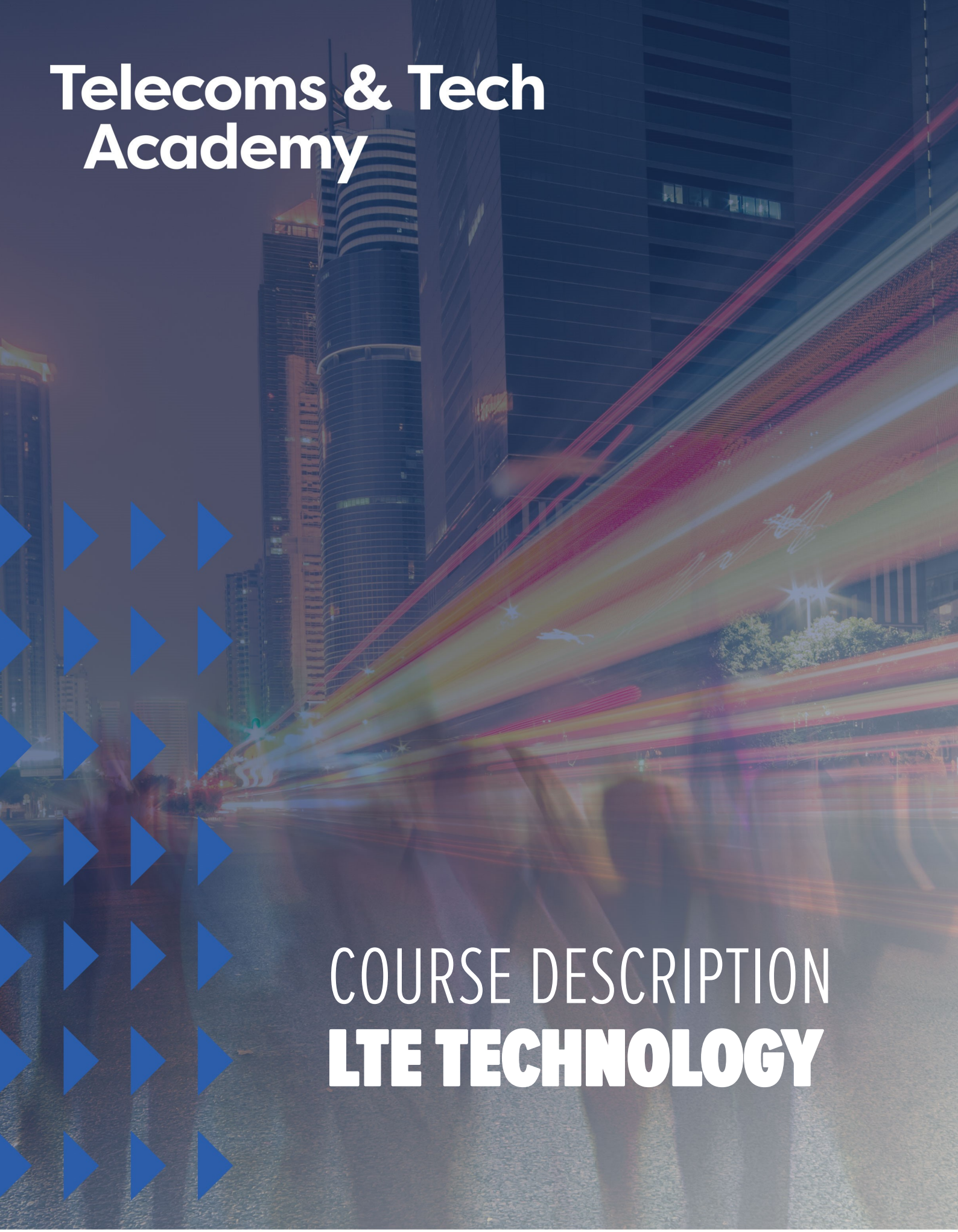
Telecoms & Tech Academy



COURSE DESCRIPTION
LTE TECHNOLOGY

Format:
Classroom or Interactive Online Delivery

Duration:
2 days or 4 x 3 Hour Online Sessions

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COURSE SUMMARY

HIGHLIGHTS

- **Comprehensive overview of LTE**
- **Suitable for those who need to understand the realities of LTE technology and its implications for the business**
- **LTE technology concepts made accessible with easy explanations -covering the radio as well as the evolved radio access and packet core networks**
- **LTE Advanced presented as well associated systems and technologies**
- **Latest industry research and analysis of LTE deployments and strategies**
- **Classroom or Web Based Delivery**

"The course was good and very helpful, the teacher was well up to the task!

GCL Econet

COURSE SUMMARY

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.

OUTCOMES & COMPETENCY DEVELOPMENT

The participant will:

- 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 protocol s 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.

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COURSE CONTENTS

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.

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