LTE 4G and 5G Mobile Networks Course

6 – 10 September 2027
Düsseldorf (Germany)



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Introduction

The "LTE 4G and 5G Mobile Networks" course provides engineers, network planners, and technical managers in the telecommunications field with an in-depth understanding of LTE and emerging 5G technologies. The curriculum explores core network architecture, radio access technologies, spectrum management, and advanced mobile network features—preparing participants to effectively deploy, optimize, and troubleshoot modern wireless systems.

Course Objectives

By the end of this course, participants will be able to:

- Understand the architecture and key components of LTE and 5G networks.
- Analyze radio access technologies and spectrum allocation strategies.
- Plan and optimize the performance of LTE and 5G networks.
- Apply advanced technologies such as Massive MIMO, network slicing, and edge computing.
- Troubleshoot network issues to maintain service quality and ensure security.

Course Outlines

Day 1: Basics of LTE 4G and Its Architecture

- Overview of the LTE core network Evolved Packet Core - EPC and radio access network
- LTE radio technologies: OFDMA, SC-FDMA, MIMO
- LTE frequency bands and deployment use cases
- Case Study: LTE deployment in a developing market

Day 2: LTE Network Planning and Optimization

- Coverage planning and capacity estimation
- Interference mitigation and handover strategies
- LTE performance metrics and monitoring techniques
- Workshop: Optimization of LTE network parameters



Day 3: Introduction to 5G Architecture and Technologies

- Overview of the 5G core network and service-based architecture
- 5G New Radio NR interface and supported spectrum bands
- Enabling technologies: Massive MIMO, beamforming, and mmWave
- Case Study: 5G deployment for smart city integration

Day 4: Advanced 5G Features and Use Cases

- Network slicing and QoS configuration
- Edge computing and ultra-low latency use cases
- Security challenges and protection strategies in 5G
- Simulation: Designing a network slice for IoT deployment

Day 5: Troubleshooting, Future Trends, and Integration

- Common troubleshooting methods for LTE and 5G networks
- Migration strategies from LTE to 5G
- Emerging trends and the outlook for 6G
- Action Plan: Integrating 4G and 5G into existing infrastructure

Why Attend This Course: Wins & Losses!

- Gain a thorough understanding of LTE and 5G network technologies
- Strengthen skills in planning, deployment, and performance optimization
- Improve troubleshooting capabilities and ensure high service quality
- Prepare for the next generation of mobile communications
- Advance your career in the evolving telecom industry

Conclusion

This course is specifically developed for professionals in the telecom sector who aim to deepen their technical expertise in LTE and 5G networks. With a balanced combination of theoretical foundations and practical case studies, participants will be well-equipped to address current and future mobile network challenges.

Register now and become a certified LTE and 5G expert—ready to lead the future of mobile communications.

