Mastering 5G Network Engineering: Foundations and Protocols

15 – 19 March 2027
London (UK)



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Ref: 322865_217044 **Date:** 15 – 19 March 2027 **Location:** London (UK) **Fees:** 6100 GBP

Course Description

This comprehensive 1-week course provides telecommunications professionals with in-depth knowledge of 5G network architecture, protocols, and key technologies. Participants will gain practical insights into 5G network design, implementation, and optimization, preparing them for the next generation of mobile communications.

Learning Objectives

- Understand 5G network architecture and core components
- Master 5G protocols and their application in network design
- Explore advanced 5G technologies like network slicing and edge computing
- Develop skills in 5G network planning, deployment, and optimization
- Gain hands-on experience with 5G network simulation and testing tools

Course Modules

Day 1: Introduction to 5G Networks

- 5G overview and key features
- 5G use cases and performance objectives
- 5G standardization and timelines
- 5G spectrum and millimeter wave communications

Day 2: 5G Network Architecture

- 5G RAN technology and architecture
- 5G core network architecture and interfaces
- Control plane and user plane functions
- Distributed cloud network architecture

Day 3: 5G Protocols and Technologies

- 5G NR air interface principles
- 5G signaling protocols and procedures
- Network slicing and virtualization
- Multi-access edge computing MEC



Day 4: 5G Network Planning and Deployment

- 5G network planning considerations
- Non-standalone NSA and standalone SA deployment options
- Interworking with LTE and Wi-Fi networks
- 5G security architecture and procedures

Day 5: 5G Network Optimization and Future Trends

- 5G network performance monitoring and optimization
- Advanced antenna technologies Massive MIMO, beamforming
- AI/ML applications in 5G networks
- Future trends and beyond 5G technologies

Practical Wins for Participants

- Ability to design and plan 5G network architectures
- Proficiency in 5G protocol implementation and troubleshooting
- Skills to optimize 5G network performance and capacity
- Readiness to tackle real-world 5G deployment challenges

