

5G Foundations

Online Training Course

Overview

Our 5G Foundations training course is designed to provide a comprehensive understanding of the 5G technology ecosystem and the key policy and regulatory requirements that shape mobile communications today. This course delves into the core concepts of 5G, offering an in-depth exploration of the end-to-end architecture that defines this new generation of mobile networks. From the radio access network to the core network, participants will gain valuable insights into how 5G networks are structured and how they will transform the communications landscape.

As mobile communications evolve, the impact of 5G is creating a seismic shift in how we connect and communicate. Smartphones, which have become an essential part of daily life, are also undergoing significant changes, with components like batteries, processors, and antennas requiring major upgrades to fully leverage the capabilities of 5G. This course will address these changes, helping participants understand the technical advancements necessary to support the higher speeds and efficiency of 5G networks.

In addition to core 5G architecture, we will explore critical aspects of 5G security, 5G private networks, and mobile edge computing technologies, which are pivotal in enabling enterprises to deliver faster, more reliable services. By the end of this training, participants will have a solid foundation in 5G, equipping them to address challenges and opportunities in designing and implementing next-generation networks.

Key Details

- **Duration:** Two days (online)
- **Course language:** English
- **Course time zone:** GMT (London)
- **Class size:** Maximum of 10

Course Agenda

- **5G Overview And 5G Concepts**
 - What is 5G?
 - 5G promises
 - 5G use case families: eMBB, URLLC, mMTC
- **5G Radio Access Network**
 - What is spectrum?
 - What are 5G bands?
 - What is 5G new radio?
 - 5G new technologies
 - Massive MIMO
 - 5G beamforming
 - 5G new radio design
 - 5G numerology
 - 5G slots
- **5G Industry Progress and Offers**

- Vision ITU
- Deployments in 5G bands
- Spectrum in the UK
- 5G offers
- The impact of 5G on health
- **5G End to End Architecture**
 - 5G radio architecture
 - Standalone vs non-standalone architectures
 - 5G deployment options
 - 5G core architecture
 - 5G network slicing
 - NFV, SDN and orchestration
- **5G Core Network**
 - Evolution of 5G core
 - Enablers for 5G core
 - Components of 5G core SBA
 - Interworking between EPC and 5GC
 - 5G QoS
- **Network Slicing and Technical Components**
 - 5G SBA network function details (SMF, UPF, NRF, AUSF....)
 - What is network slicing (3GPP, NGMN, 5G PPP)
 - Benefits of network slicing
 - 5G slice attributes and slice evolution
- **5G Technology Enablers and 5G Security**
 - 5G Massive MIMO overview
 - 5G beamforming with example
 - Which Massive MIMO to choose
 - 5G security concepts and mechanisms
- **Drivers for Private 5G Networks with FWA**
 - What is a private 5G network?
 - Advantages of 5G in private networks
 - 5G private network challenges
 - Frequencies for 5G private networks in different bands
 - Situation of 5G private networks based on UK regulation
 - 5G FWA offers and deployments
- **Mobile Edge Computing in a 5G Private Network**
 - Technical architecture of MEC
 - Edge computing is a game changer and key technology
 - Key drivers stimulating demand of MEC
 - Business opportunities with MEC
 - Highly dynamic market with MEC

Why study online?

The convenience and overall cost efficiency of studying online makes it a compelling option for training. Because our online courses are delivered live you get provided with ample opportunity to interact with your instructor and classmates.