

Telecoms & Tech Academy

INTRODUCTION TO 5G

Format:
Online Academy

Duration:
5 Modules



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INTRODUCTION TO 5G PROGRAMME

COURSE OVERVIEW

5G represents not only a new generation of technologies that impact the core and access of the operator's network, but also more importantly, a restructuring of the business models leading to many, previously economically inaccessible markets such as IoT/M2M on a much larger scale.

Many, if not all areas of the network will see some degree of major change.

In the future, it becomes essential for the operator to facilitate and provision services for 100s of millions of connected services/devices. Many services will be concerned with applications from a variety of industry verticals with numerous service based requirements, e.g. low latency, low power sensor networks, hi mobility, wide area cellular connectivity, and data aggregation.

PROGRAMME MODULES

- 1) Defining 5G, Market Drivers & Use Cases
- 2) 5G Technologies & Network Concepts
- 3) 5G Radio Access Networks & Technologies

WHAT WILL YOU LEARN

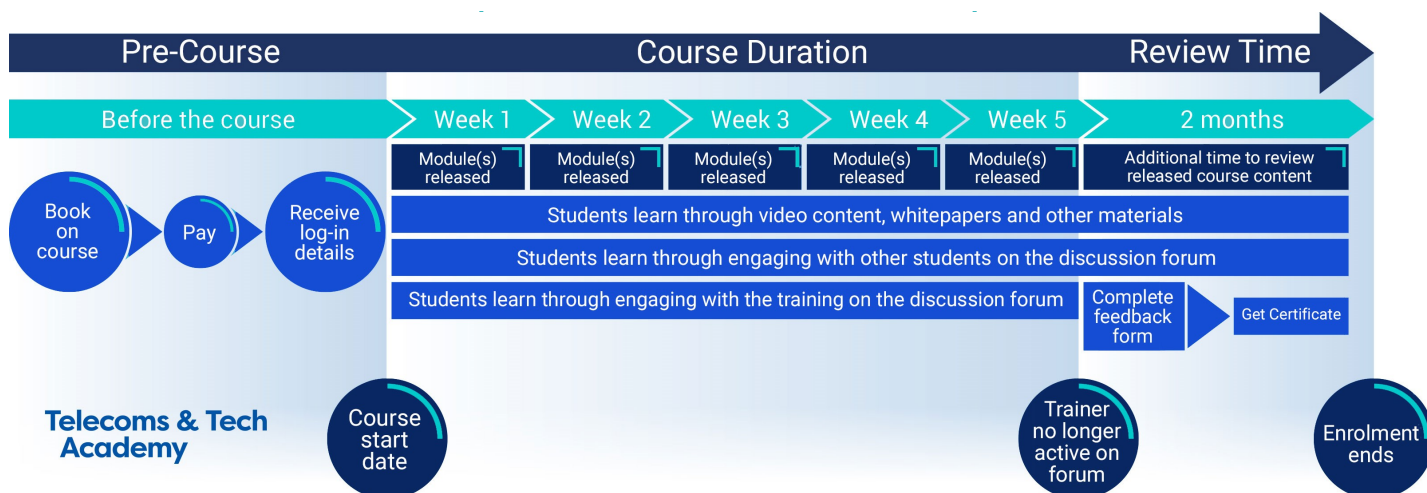
Attending this course will empower you to develop or be able to:

- Evaluate implementation options for 5G, building knowledge of a comprehensive set of technology / deployment scenarios, and identifying the use case that each combination can effectively support.
- Develop technology solutions and roadmaps that are better aligned with the expected industry direction and that take account of latest technology developments and initiatives.
- A solid foundation on which to build organisational competency development plans to ensure opportunities arising from 5G can be maximised.
- Confidence to set expectation and drive internal debate on advanced technology issues, and to better evaluate solutions in terms of commercial viability, risk, and strategy.

BENEFITS OF ONLINE ACADEMY

- **Boost your resume** – with self-paced learning and advance your career with specialist technical skills
- **Convenience and flexibility** – Learn whenever you want – from the comfort of your home or office
- **Enabled for mobile** – make use of downtime with easy bite sized chunks of learning
- **Learn and apply right now** – immediately implement what you learn during the course
- **Become part of a professional learning community** – discuss any problems with students and the Course Instructor
- **Cost effective** – save on travel expenses, reduce unproductive down time and no crowded airports
- **Grow as a team** – with multiple licenses your team can access the course and learn together, no matter where they are in the world

WHAT HAPPENS DURING YOUR ONLINE ACADEMY COURSE?



PROGRAMME MODULES

MODULE1: DEFINING 5G, MARKET DRIVERS AND USE CASES

- 5G as a Concept
- Market Drivers for 5G
- Key Requirements & Design Principles
- Performance Requirements
- Consumer Device Issues
- Supporting Video and TV
- 5G, M2M and the Internet of Things
- Broadcast & Multicast
- Advanced Use Cases
- Smart Sensors
- HD City
- Augmented Reality
- Stadium
- Public Safety / Emergency
- Organisations Driving 5G Development
- Standardisation Roadmap
- 5G and LTE Co-existence
- Spectrum, Licensing and Regulatory Issues
- Impact of 5G on CSP / Operator Strategy
- Case Studies

MODULE2: 5G TECHNOLOGIES AND NETWORK CONCEPTS

- Current network performance and Required Improvements
- Design Principles for 5G
- Radio Network
- Core Network
- Operations and Maintenance
- Networking Technologies for 5G
- Network Function Virtualisation
- NFV Concepts
- NFV Benefits and Challenges
- NFV in 4G Networks
- Software Defined Networks
- SDN Concepts
- SDN Benefits and Challenges
- SDN in 4G Networks
- 5G Core Network Concepts
- Overall Network Picture and Ideas
- Functional Areas of the 5G Network
- Network Slicing Concepts
- Network Slicing Examples
- NFV and SDN in 5G
- Mobile Edge Computing
- ETSI Reference
- MEC Architectures
- MEC Examples

MODULE3: 5G RADIO ACCESS NETWORKS AND TECHNOLOGIES

- Introducing 5G RAN
- 5G RAN Performance
- Spectrum Requirements for 5G
- Evolving LTE toward 5G
- Co-Existence and Backwards Compatibility
- Application Requirements for 5G Radio
- Low Latency Design
- Bandwidth Scaling
- High Efficiency Radio Frame
- Low Latency Radio Frame Structures
- Multiple Access for 5G Radio
- Multiple Access Concepts and Design Targets
- Candidate Multiple Access
- Multiple Access Compared
- NOMA
- Radio Waveforms for 5G
- Waveform Requirements
- Candidate Waveforms
- Waveform Comparisons
- MIMO in 5G
- RAN Architecture
- Current and Future RAN Access
- RAN Protocols and Transmission
- Fronthaul and Backhaul requirements
- CPRI Concepts for Fronthaul
- D-RAN and C-RAN
- User Plane Aggregation

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.