Course Introduction

This course gives a technical overview of 5G. Throughout the course, learners will gain a solid understanding of the essential topics relating to 5G. The course includes the design goals and development schedule for 5G, the principles and architecture of the 5G air interface, radio access network and core network.

Modules also explore use cases and performance objectives; network function virtualisation and network slicing; standardisation and timelines for 3GPP and the ITU; and interworking and compatibility between 5G, LTE and Wi-Fi. The course further discusses radio spectrum and millimetre wave communications, and non-standalone and standalone deployment options.

Key learning outcomes

On completion of this course, learners will have gained a solid understanding of the essential topics relating to 5G, including:

- 5G introduction and key features
- Standardisation and timelines for 3GPP and the ITU
- Use cases and performance objectives
- Radio spectrum and millimetre wave communications
- Principles of radio transmission and reception in 5G
- Radio access network architecture
- Non-standalone and standalone deployment options
- Core network architecture
- Network function virtualisation and network slicing
- Interworking and compatibility between 5G, LTE and Wi-Fi

Key features

- Detailed custom reading materials
- Supporting video resources, presented by subject experts
- Formative assessment in support of learning
- Summative assessment to assess learning
- Discussion items, providing additional opportunities for learners to articulate their understanding of key topics
Expert multidisciplinary e-courses for engineers at all career stages

Core Units

- Unit 1: The Role of 5G
- Unit 2: 5G Development
- Unit 3: Drivers and Objectives of 5G New Radio
- Unit 4: Using Millimetre Waves
- Unit 5: 5G New Radio – Physical Principles
- Unit 6: Resource Blocks, Resource Grids and Resource Mapping
- Unit 7: Network Function Virtualisation
- Unit 8: RAN Deployment Options
- Unit 9: 5G Core Network Architecture and Interfaces
- Unit 10: 5G Core Network – Working with EPC and Non3GPP Access
- Unit 11: Final Assessment

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Benefits for organisations

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Who should take this course?

This course is intended for engineers and managers new to, or already working in, mobile communications with a focus on 5G. It would also appeal to those looking to gain a head-start on 5G for future projects, or to remain at the forefront of developments in the field of telecoms.

Course pre-requisites

- A familiarity with telecommunications and general engineering terminology is assumed
- An understanding of LTE cellular systems would be beneficial

Other related courses

- Mobile Communications
- Fundamentals of Telecommunications

How to purchase

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