

# Introduction to 5G

## Course Overview

This course is part of our introductory series we are currently developing. It covers a broad basis of 5G technologies and the associated network topology. Each topic is broken down into fundamental segments to make it easy to understand, whilst still discussing reasoning behind the technology, how it works and why it is needed. The course has been developed in-line with 3GPP and ITU-R publications.

## Duration

1 Day

## Delivery Method

- Classroom
- Tutor Led
- Demonstrations
- Syndicate exercises
- Lectures

## Audience

This course is aimed at people already familiar with telecoms principles who are looking to gain some entry level knowledge of 5G. A broad range of topics are covered that would allow a student to conduct further research in-more depth if they so wish. Project managers and network engineers would definitely benefit from this course, as well as anyone wanting to specialise in 5G.

## Course Prerequisites

There are no course prerequisites.

## Course Objectives

On completion of the course delegates will be able to:

- IMT 2020, ITU-R
- Full network topology as per final 5G release (NG-RAN & Core Network)
- Standalone/Non-Standalone deployments
- eMBB
- mMTC
- URLLC
- Access methodology
- Massive-MIMO
- IoT/nB-IoT and integration into LTE
- Network slicing
- Frequencies
- SDN (what it is and why we need it)
- NFV (what it is and why we need it)



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## Introduction to 5G (continued)

### Content Headings

- IMT 2020
- NG-RAN
- 5G UE
- Core Network- UPF AMF SMF PCF AF  
NSSF AUSF UDM NEF NRF
- Network deployment types - Non-  
standalone/standalone
- Key associated technologies - eMBB,  
mMTC, URLLC
- eMBB spectral efficiency
- Access Methods
- mMIMO
- IoT
- Network Slicing
- Frequencies
- IoT integration
- SDN - Data Forwarding layer included,  
Why SDN?
- NFV, Why NFV



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