

# 5G Outlook and Technologies



## COURSE OVERVIEW

This course provides an overview of 5G capabilities and evaluates the driving forces behind 5G efforts, timeline, key requirements, and pre-5G activities in the cellular infrastructure domain. Key topics include future road-maps for key operators, guidelines on spectrum and regulatory initiatives, and academic research on millimeter waves, massive MIMO, and IoT.

This course will also review 5G NR coexistence with other wireless communication systems. Three primary use cases of 5G will also be reviewed with greater detail – enhanced mobile broadband (eMBB), ultra-reliable and low latency communications (URLLC), and massive machine-type communication (mMTC). The course addresses the challenges inherent with tackling issues such as new frequency spectrum, wide bandwidth, MIMO, and Beam Steering. 5G NR non-standalone mode (NSA) and standalone mode (SA) will be reviewed to understand the future role of the 5G base station (gNB).

## KEY TAKEAWAYS:

- 5G timeline, key requirements, use cases, and recent developments in the wireless industry
- Understanding 3GPP's progress: Non-standalone (NSA) 5G NR and Standalone (SA) 5G NR
- 5G wireless features and their benefits, including new radio physical layer, 5G base station—gNodeB (gNB)
- Discuss the key enablers of 5G and key deployment topologies
- 5G and Edge computing, network slicing, Network Function Virtualization (NFV), fiber backhaul, C-RAN, and Wi-Fi
- 5G deployment—potential applications and changes required to implement 5G

## COURSE INCLUDES:

- ✓ Course outline
- ✓ Online access to self-guided PowerPoint deck
- ✓ Certificate of completion

## LIVE INSTRUCTOR-LED TRAINING HOURS:

3 Hours

## INTENDED AUDIENCES:

- ✓ All job types
- ✓ Those interested in learning about the development of 5G standards, requirements, expected timelines, current cases, and field trials

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