

5G Networks

Discover 5G Technology and the End-to-End 5G System An IEEE eLearning Library Course Program

5G is the next generation of radio systems and network architecture that delivers extreme broadband, ultra-robust, low latency connectivity, and massive networking for the Internet of Things. As LTE technology evolves toward 5G, it's vital for technical professionals and industry leaders to understand how to deliver on the 5G vision and meet consumer demand for higher communication speeds.

In this cutting-edge course program, produced in cooperation with Nokia and the IEEE Future Networks Initiative, learners will receive an in-depth view of performance requirements, future scenarios, and the roadmap to implementation. With over ten hours of material, the program also explores the intricacies of 5G standardization by the 3rd Generation Partnership Project (3GPP) and the IEEE 802 LAN/MAN Standards Committee.

These courses are designed for professionals working on 5G implementation, including service fulfillment personnel who will be supporting 5G, engineers and technical professionals with telecommunications backgrounds who want to expand their knowledge of 5G, and telecommunications leaders who are preparing their organizations and systems for the future.

Nokia

This course program is produced in cooperation with Nokia, a globally recognized leader in 5G. Nokia is working with both Communication Service Providers and leading industry players to realize the full potential of 5G.

IEEE 802 LAN/MAN Standards Committee

The IEEE 802 LAN/MAN Standards Committee (IEEE 802 LMSC) is a key contributor to this course program. The IEEE 802 LMSC develops, maintains, and advocates for networking standards, as well as recommended practices, on a global basis.

5G Networks Quick Facts

3-course program designed to give engineers an understanding of 5G technology from an end-to-end perspective

Courses developed and peer reviewed by experts in their fields, a process that guarantees the quality of technical content

Printable IEEE CEU or PDH certificates awarded upon successful completion of the program

Available on-demand through IEEE *Xplore*, the IEEE Learning Network (coming soon!) or order files to load on a company LMS

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5G Networks Course Modules include:

Discover 5G

Learn what is driving 5G as well as the technical performance requirements for radio systems to be able to support 5G New Radio and Core networks. A wide portfolio of future scenarios and use cases will also be identified.

- Includes IEEE 802.11 Radio Standards Evolution which provides more information on spectrum sharing, the Network Interfaces protocols, and the main functions of each protocol layer.

5G System Principles

Learn about 5G technology components (including 5G Spectrum, Massive Multiple Input Multiple Output (MIMO) and 3D-Beamforming principles, and Multi-RAT Dual Connectivity) along with the main features of 5G Core Network and 5G Radio Access. This segment will focus on how the 5G system has been standardized thus far and how the roadmap for 5G standards will be deployed. A timeline of the rollout will be presented.

- Includes supporting content IEEE 802.11 Radio Technology Components with Focus on 802.11ax, 11ad, 11ay, which focuses on how IEEE 802.11 radio systems are integrated into the 5G architecture.

Understanding 5G Fundamentals

Dive into 3GPP 5G system architecture, security, quality of service, and network slicing. The 5G NR Spectrum, operating frequency bands, and spectrum sharing mechanisms will also be explored. Following this training segment, learners will have a better grasp on the Network Interfaces protocols and the main functions of each protocol layer.

- Includes IEEE 802.11 Use Cases for 5G Fixed Wireless Access, Backhaul, VHT/Line of Sight, Dense Urban and Indoor Hotspot, which focuses on use cases for 5G systems such as the Indoor Hotspot and Dense Urban scenarios as defined by IMT-2020.

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