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Information Technology

Next Generation Wireless Networks

Course Introduction

In today's world, wireless networks play a pivotal role in connecting numerous nodes across diverse applications, ranging from homes to large enterprises and various locations. These networks operate within the framework of the OSI model, predominantly at the physical layer. The versatility of wireless networks is evident in their various shapes and sizes, encompassing cell phone networks, WLANs, satellite networks, and terrestrial microwave networks.

This immersive and enlightening training course will take you on an in-depth exploration of Wireless, 5G, and IEEE 802.11 technologies. This course will uncover the latest fixed and wireless trends, applications, and use cases, while exploring an array of current and future technologies. Be at the forefront of the next wireless generation as we delve into the IEEE 802.11 protocol, look into various 802.11 variations, including 802.11k/r/w/z/v/u/s/p/ad/ax/y/z, modulation techniques, and power-saving initiatives. Participants will explore the practical considerations, neural networks, and the latest 802.11ay advancements, the coexistence of 802.11 with 5G,encompassing RF principles, progressive evolution from 3G to 5G, and LTE integration.

Target Audience

- Cloud Computing Engineer
- Computer Network Specialist
- Computer Support Specialist
- Database Administrator
- Information Technology Analyst
- Information Technology Leadership
- Information Security Specialist
- Software/Application Developer
- Web Developer
- Technology sales consultant

Learning Objectives

Gain a comprehensive understanding of LAN, PAN, and BAN wireless technologies, including their fundamental principles, similarities, and distinctions.
• Distinguish between the characteristics and functionalities of 802.15.1, 802.15.4, 802.15.6, and 802.11 wireless standards, and comprehend the intricacies of 802.11.
• Develop a clear comprehension of various wireless technologies like RFID, Bluetooth, and Zigbee, and effectively differentiate between their features and applications.
• Acquire knowledge about essential aspects of 802.11, including modulation, coding, and other relevant components.
• Investigate different 802.11 scenarios, configurations, and requirements, while also exploring potential future advancements in this wireless technology.

Course Outline

- **Day 01**

  Wireless, 5G and IEEE 802.11
  • Fixed and wireless trends, applications and uses
  • Assorted current and future technologies
  • The next wireless generation technology
  • IEEE 802.11 summary (including protocol)

- **Day 02**

  802.11 Continuation, Including 802.11 Variations
  • 802.11k/r/w/z/v/u/s/p/ad/ax/y/z
  • 802.11 technologies, frequencies, channels and bands
  • 802.11an/ac
  • 802.11ax
  • Modulation, function blocks and power save initiatives

- **Day 03**

  802.11 Standardization and Basics
  • REVmc/Location, Bluetooth, GPS

- Practical considerations, location and models
- Neural networks
- 802.11ay
- License-exempt operation
- EDMG (incorporating security, formatting and
- channelization)

- **Day 04**

802.11 Continuation and 5G

- 802.11ah
- Radio Frequency principles for specific bands
- Progressive evolution, from 3G to 5G
- Tight and Loosely interacting New Radio Access
- Technology
- LTE and 5G existing together
- What does the future hold

- **Day 05**

5G Continuation

- How does all of this fit in with the Internet of Things?
- Driving forces, and its influence on the technology
- Safety and other aspects that need considering
- What is required to put a 5G system in place, and what are the aspects that require consideration?
- Legal aspects pertaining to 5G installations
- Transmission considerations

Confirmed Sessions

FROM	TO	DURATION	FEES	LOCATION
Dec. 15, 2025	Dec. 19, 2025	5 days	4250.00 $	UAE - Dubai