

## Wireless in the Healthcare IT Environment Course Outline

### Course Summary:

This vendor-neutral class supporting the role of a frequency coordinator focuses on the installation, management, and troubleshooting of RF technologies in healthcare today; including WMTS, 802.11, RFID, and cellular communications. Topics include RF and antenna basics, common interference sources in healthcare, remote patient viewing using the Wireless Medical Telemetry Service (WMTS), 802.11 and access point configuration including wireless VLANs, RFID basics, cellular communications, and security requirements for wireless systems. Students receive hands-on training with network analyzers and spectrum analyzers, perform site surveys for WMTS and 802.11, and troubleshoot WMTS antenna systems. Basic networking skills are recommended.

### Course length:

5 days

### Pre-requisites/Required Skills/Pre-course Work:

Essentials of Healthcare IT or equivalent

### Location:

GEHC training facilities in Wisconsin

GEHC training facilities in Florida

### Objectives:

- Present the basic concepts of RF, including: propagation, antennas, signal strength, reflection, diffraction, scatter, null spot, and attenuation
- Recognize physical topologies of RF systems within a healthcare environment, including: coaxial systems, distributed antenna, distributed access point, and controlled access points
- Recognize the hardware used to build RF systems, including: medical telemetry, WiFi, RFID, and wireless patient monitoring
- Associate a wireless service used within healthcare to a specific frequency range, including: medical telemetry, wireless patient monitoring, RFID, and cellular communications
- Monitor the RF environment for changes in performance of existing systems
- Perform WMTS and 802.11 site surveys
- Describe issues surrounding wireless coexistence
- Perform antenna splitter board troubleshooting using a spectrum analyzer
- Specify the importance of quality of service in healthcare networks
- Demonstrate awareness of the integrity and security of data transmitted wirelessly
- Understand access point associations and how they occur by building secure 802.11 networks



## GE Healthcare Education Services

- Troubleshoot signal drop-out due to transmitter, application, infrastructure, operator error, and RF interference
- Explain the role of a frequency coordinator in a healthcare setting

### Equipment reviewed:

No GE Products

### Related courses:

Essentials of Healthcare IT

### Student requirements:

None

### Intended audience:

Biomedical engineers  
IT technicians

### Capacity:

Minimum 6 and maximum 10

### Other:

Class cannot be held at remote locations

