Course Overview
This two-day class provides a strong test foundation for RF engineers engaged in 3GPP Long Term Evolution (LTE) technology and is based on the groundbreaking new book *LTE and the Evolution to 4G Wireless – Design and Measurement Challenges*. Written by Agilent’s measurement experts, the book provides technical and practical knowledge about the complex LTE technology for RF design engineers and their management. Conducted by these experts, the class focuses on handset and base station RF measurements and provides hands-on lab time with the latest LTE test solutions.

What you will learn
- Understanding of the key concepts of LTE and the emerging standards.
- How the UE and eNB Physical Layers are defined.
- Challenges of Receiver Design and Measurement.
- Challenges of Transmitter Design and Measurement.
- Specific Design and Measurement Challenges of Multiple Input and Multiple Output (MIMO) systems.

Detailed Course Agenda
Introduction to LTE
- Class overview and timeline
- What you can expect to learn
- LTE System Overview
- The Evolution from UMTS to LTE
- LTE/SAE Requirements and Timeline
- Finding 3GPP LTE/SAE Specification Documents

Air Interface Concepts
- Radio Frequency Aspects
- OFDM
- SC-FDMA
- MIMO

Physical Layer
- Physical Channels and Modulation
- Multiplexing and Channel Coding
- Introduction to Physical Layer Signaling

Simulation and Early R&D Hardware Testing
- Uplink and Downlink Simulation Examples
- Mixed-Signal Design Challenges
- Combining Simulation and HW to Test Mixed-Signal Hardware Coded BER Measurement Example

Transmitter Test
- Systematic Approach for Verifying LTE Transmitter Performance
- Spectrum Measurements
- Vector (Frequency and Time) Measurements
- Analysis of Signals After Digital Demodulation

Receiver Test
- Verifying the RF Receiver
- Verifying the Baseband Receiver
- Receiver Performance Under Impaired Conditions
- Closed Loop Receiver Design and Measurement Challenges

Design and Verification Challenges of MIMO
- eNB Transmitter MIMO Challenges
- MIMO Receiver Design and Verification Challenges
- Receiver Performance Testing Using Static and Continuously Faded Channels
- Requirements for Phase Coherence

Demonstration of LTE Communications Test Set
Wrap up with discussion on 4G: LTE – Advanced
Specifications

Course type
Technology and Test training

Location
Santa Rosa, California – June 17-18, 2009

Audience
Anyone wanting to gain an overall perspective of the LTE concepts and challenges especially RF Engineers working on early development of RF/Baseband components of LTE receivers and transmitters

Prerequisites
Basic Knowledge on Digital Modulation and associated RF Testing

Course length
Two days

Course format
Lecture with demos and student hands-on.

Price
$1800 per student
Includes Agilent’s LTE book (list price $100).

To save you time and travel, many Agilent courses can be delivered at your site. Agilent can provide required equipment or you can save money by furnishing your own.

To receive additional information, register for this course, or to view Agilent’s other course offerings, please visit our website at: www.agilent.com/find/lte or call: 1-800-829-4444 (US) or 1-877-894-4414 (Canada).