



NEMHANS SOLUTIONS PVT LTD

Pro Telecom: A Certified RF Specialization Course (2G to 5G)

Mode of Classes: Online & Practical

Course Duration: 3 Months

Timings: 06.00 PM-08.00 PM (Mon-Fri), 11.00 AM-01.00 PM (Saturday)

Course Content in Short:

- **GSM, GPRS, and EDGE**
- **3G, 4G-LTE**
- **5G Planning, Optimization, m-MIMO, mm-Wave**
- **Vo5G, IOT in 5G, ORAN for 5G**
- **5G Device-to-Device and Machine-to-Machine Communication**
- **RF and Microwave Basics, Antenna Design and Analysis**
- **Practical: RF/LOS/EMF-Survey, BB/NB-Test, 2G/4G-Drive Test**

Prospective Candidates:

- **BTech/Diploma Final Year Students (ETC/ECE/EE)**
- **Working Professionals from Industry**

Eligibility for the Course: Must have prior knowledge about mobile communication and communication system engineering.

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Course Syllabus

- 1. 2G:**
 - GSM Fundamentals
 - GSM Planning
 - GSM Optimization
 - GPRS EDGE
- 2. 3G:**
 - 3G Fundamentals
 - 3G Planning
 - 3G Optimization
- 3. 4G-LTE:**
 - 4G LTE Fundamentals
 - 4G LTE Planning

- 4G LTE Optimization
- LTE Call Flow
- VoLTE - Voice over LTE
- VoLTE Optimization
- 4G LTE Advanced and LTE Advanced Pro
- 4G LTE Drive Test
- LTE for Industry Professionals
- Dynamic Spectrum Sharing (DSS) for 5G & LTE

4. **5G:**

- 5G Technology Fundamentals
- Migration to 5G and the Deployment
- 5G Frequency Bands
- 5G Planning
- 5G Optimization
- Network Slicing
- 5G Applications and Use Cases
- Massive MIMO and mmWave
- 5G Performance Parameters and their Optimization
- 5G Core Network (5GC)
- Vo5G (Voice over 5G)
- 5G Architecture Model and Concepts
- IoT in 5G
- 5G Protocols
- D2D : 5G Device-to-device communication
- 5G M2M: Machine to Machine Communications
- Open RAN
- 5G RAN Virtualization
- O-RAN (ORAN for 5G)

5. **Telecom Others:**

- Microwave Basics
- Excel - A Step by Step Complete Course
- Data Communication Fundamentals
- RF Basics and Components
- Antenna Design, Analysis, and Optimization

6. **Practical Courses:**

- RF Survey
- LOS Survey
- EMF Survey
- BB/NB Test
- 2G Drive Test
- 4G Drive Test
- Learn of Tools: Google Earth, Mapinfo, Tera Discovery, Azenqos
- Exposure to Hardware Tools: GPS, Altimeter, Aronia Kit, Narda Kit, Drive Test Tool