

Defining the Blueprint for 6G Networks

Duration:8 Hrs

Part 1: 6G Timeline

1. Historical Context and Milestones

- Evolution from 1G to 6G
- Key phases of wireless development

2. Projected Timeline for 6G Deployment

- Research and development (2020–2025)
- Standardization and trials (2025–2030)
- Commercial deployment and scaling (2030 onward)

3. Regional Developments and Global Progress

- Asia's leadership (China, Japan, South Korea)
- European Union's 6G initiatives
- U.S. and other global efforts

Part 2: 6G Requirements

4. Technical Requirements for 6G

- Extreme data rates and bandwidth (Tbps-level speeds)
- Ultra-reliable low-latency communication (uRLLC++)
- Massive device connectivity and scalability

5. Physical Layer Advancements

- Terahertz frequency utilization
- Antenna technology innovations (massive MIMO, RIS)
- Energy efficiency and power optimization

6. Operational and Regulatory Requirements

- Spectrum allocation and management
- Global interoperability and standardization
- Security and privacy frameworks

Part 3: 6G Groups

7. Key Players in the 6G Ecosystem

- Industry leaders (telecom operators, hardware vendors)
- Academia and research institutions
- Government and regulatory bodies

8. Standardization Organizations and Initiatives

- ITU's 6G Vision Group
- 3GPP and global standardization roles
- Regional initiatives (e.g., Next G Alliance, Hexa-X)

9. Collaborative and Open Research Platforms

- Role of open-source and community-driven projects
- Testbeds and pilot projects
- Public-private partnerships

NOTE: This course focuses solely on theoretical and conceptual topics, with no lab sessions included.

How you'll benefit

This training will help you: • Learn the skills, technologies, and understand Cellular technology