

# The 5G Network Security: Safeguarding Next-Gen Connectivity

Telecom Engineering  
Rome (Italy)  
14 - 25 Jul 2025

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## The 5G Network Security: Safeguarding Next-Gen Connectivity

**Ref:** 321582\_132986 **Date:** 14 - 25 Jul 2025 **Location:** Rome (Italy) **Fees:** 7100 **Euro**

### Course Description

This intensive 10-day course provides a comprehensive understanding of 5G network security. Participants will explore the 5G architecture, security features, potential vulnerabilities, and advanced protection strategies. The course covers practical implementation of security measures, emerging threats, and cutting-edge technologies in 5G security.

### Learning Objectives

- Understand 5G network architecture and its security implications
- Identify and mitigate potential security threats in 5G networks
- Implement robust security measures for 5G infrastructure
- Analyze emerging security challenges and develop effective solutions
- Apply best practices for securing 5G-enabled devices and services

### Course Modules

#### Day 1: Introduction to 5G Security

- Overview of 5G technology and architecture
- 5G security landscape and challenges
- Comparison of 4G and 5G security features
- Key security standards and organizations

#### Day 2: 5G Security Architecture

- Core network security components
- Radio access network RAN security
- Network slicing security
- Edge computing security considerations

#### Day 3: Authentication and Access Control

- 5G authentication mechanisms
- Subscriber privacy and identity protection
- Access and mobility management security
- Zero Trust principles in 5G networks

#### Day 4: Encryption and Data Protection

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- 5G encryption protocols and algorithms
- Key management and distribution
- Secure communication channels
- Data integrity and confidentiality measures

## **Day 5: Network Function Virtualization NFV and Software-Defined Networking SDN Security**

- Security in virtualized environments
- SDN security challenges and solutions
- Container and microservices security
- Orchestration and automation security

## **Day 6: Threat Detection and Mitigation**

- Common attack vectors in 5G networks
- Intrusion detection and prevention systems
- Security information and event management SIEM
- Threat intelligence and analysis

## **Day 7: IoT and Device Security in 5G**

- Securing massive IoT deployments
- Device authentication and management
- Over-the-air OTA updates and patch management
- IoT security best practices

## **Day 8: Cloud and Edge Security in 5G**

- Multi-access edge computing MEC security
- Cloud-native security approaches
- Securing APIs and microservices
- Data privacy in distributed architectures

## **Day 9: Emerging Technologies and Future Trends**

- AI and machine learning in 5G security
- Quantum-safe cryptography
- Blockchain applications in 5G security
- 6G security considerations

## **Day 10: Compliance, Regulations, and Best Practices**

- Global 5G security regulations and standards
- Privacy laws and data protection
- Security audits and assessments

A graphic of a chessboard with several chess pieces. A large gold king piece is in the foreground, with a silver pawn and a silver knight behind it. In the background, there are concentric circles resembling a signal or radar pattern.

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- Industry best practices and frameworks

## Practical Wins for Participants

- Ability to design and implement secure 5G network architectures
- Proficiency in identifying and mitigating 5G-specific security threats
- Skills to integrate advanced security technologies in 5G deployments
- Knowledge to ensure compliance with 5G security regulations and standards

A graphic of a chessboard with several chess pieces. A large gold king piece is in the foreground, with a silver pawn and a silver knight behind it. In the background, there are concentric circles emanating from a point, suggesting a signal or a strategic move.

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