BLACKBIRD FOR TRAINING

Modern CCTV Fundamentals and Network/IP-Based System Design

19 – 23 July 2027
Barcelona (Spain)



Modern CCTV Fundamentals and Network/IP-Based System Design

Ref: 3254901_209123 **Date:** 19 – 23 July 2027 **Location:** Barcelona (Spain) **Fees:** 5900 GBP

Introduction

This comprehensive 1-week course introduces newly graduated security officers to the fundamentals of CCTV systems, focusing on modern network/IP-based CCTV technologies. Participants will learn the core concepts, essential components, and critical design principles that underpin effective video surveillance solutions.

Covering everything from analog vs. digital vs. IP cameras to system integration and cybersecurity, this course prepares participants to deploy, manage, and maintain modern security surveillance systems in dynamic environments. Participants will gain hands-on insights into designing scalable and resilient CCTV system design frameworks that meet real-world security needs.

Course Objectives

By the end of this course, participants will be able to:

- Understand the fundamental concepts and components of CCTV systems.
- Gain in-depth knowledge of IP-based CCTV technologies, including protocols like ONVIF and RTSP.
- Design effective and scalable CCTV systems tailored to various security requirements.
- Apply best practices in cybersecurity to protect network-based video surveillance systems.
- Develop skills in system maintenance, troubleshooting, and integrating cutting-edge technologies like AI video analytics and facial recognition.

Course Outlines

Day 1: CCTV Fundamentals and Components

- Introduction to CCTV: purpose, types, and practical applications.
- Core components of CCTV systems: cameras, lenses, sensors, and accessories.
- Differences and advantages of analog, digital, and IP cameras.
- Key video elements: resolution, frame rates, compression techniques for optimal performance.

Day 2: Network and IP-Based CCTV Systems

- Overview of IP-based CCTV systems and essential network infrastructure.
- Key IP protocols and standards ONVIF, RTSP, TCP/IP in network CCTV systems.
- Video transmission methods: wired and wireless options for video surveillance.
- Importance and implementation of Power over Ethernet PoE in modern CCTV systems.



Day 3: CCTV System Design Principles

- Conducting site surveys and risk assessments for CCTV installations.
- Strategies for camera placement and optimizing fields of view.
- Designing network architectures: bandwidth considerations, switches, VLANs.
- Storage solutions: NVRs, cloud storage, and Video Management Systems VMS for scalable video management.

Day 4: Cybersecurity and Integration in CCTV Systems

- Identifying cybersecurity threats and risks in network-based CCTV systems.
- Applying cybersecurity best practices: encryption, access control, and secure configurations.
- Integrating CCTV with other security systems access control, alarms for unified protection.
- Exploring remote monitoring solutions and mobile access for modern security surveillance.

Day 5: System Maintenance, Troubleshooting, and Future Trends

- Implementing routine maintenance and health monitoring for CCTV systems.
- Techniques and tools for CCTV troubleshooting and resolving common issues.
- Exploring emerging technologies: AI video analytics, facial recognition, and thermal imaging.
- Legal, privacy, and ethical considerations in deploying CCTV video surveillance solutions.

Why Attend this Course: Wins & Losses!

- Develop a solid understanding of CCTV fundamentals and modern IP-based CCTV systems.
- Gain hands-on skills in CCTV system design, including camera placement and network architecture.
- Master best practices for cybersecurity in CCTV to protect sensitive data.
- Learn how to integrate cutting-edge technologies like AI video analytics and facial recognition.
- Boost your ability to manage maintenance, troubleshooting, and future-proof your security solutions.
- Become a key contributor to deploying scalable, efficient, and ethical video surveillance systems.

Conclusion

This 1-week course on Modern CCTV Fundamentals and Network/IP-Based System Design provides security officers and professionals with essential skills and practical knowledge to thrive in today's dynamic security environments.

Covering everything from CCTV fundamentals and IP-based CCTV technologies to advanced video surveillance design and cybersecurity practices, this course will equip you with the tools to build and manage modern security surveillance systems that meet the highest standards of performance, reliability, and compliance.

Join this program to gain a competitive edge in deploying and managing innovative CCTV solutions tailored to real-world security challenges.

