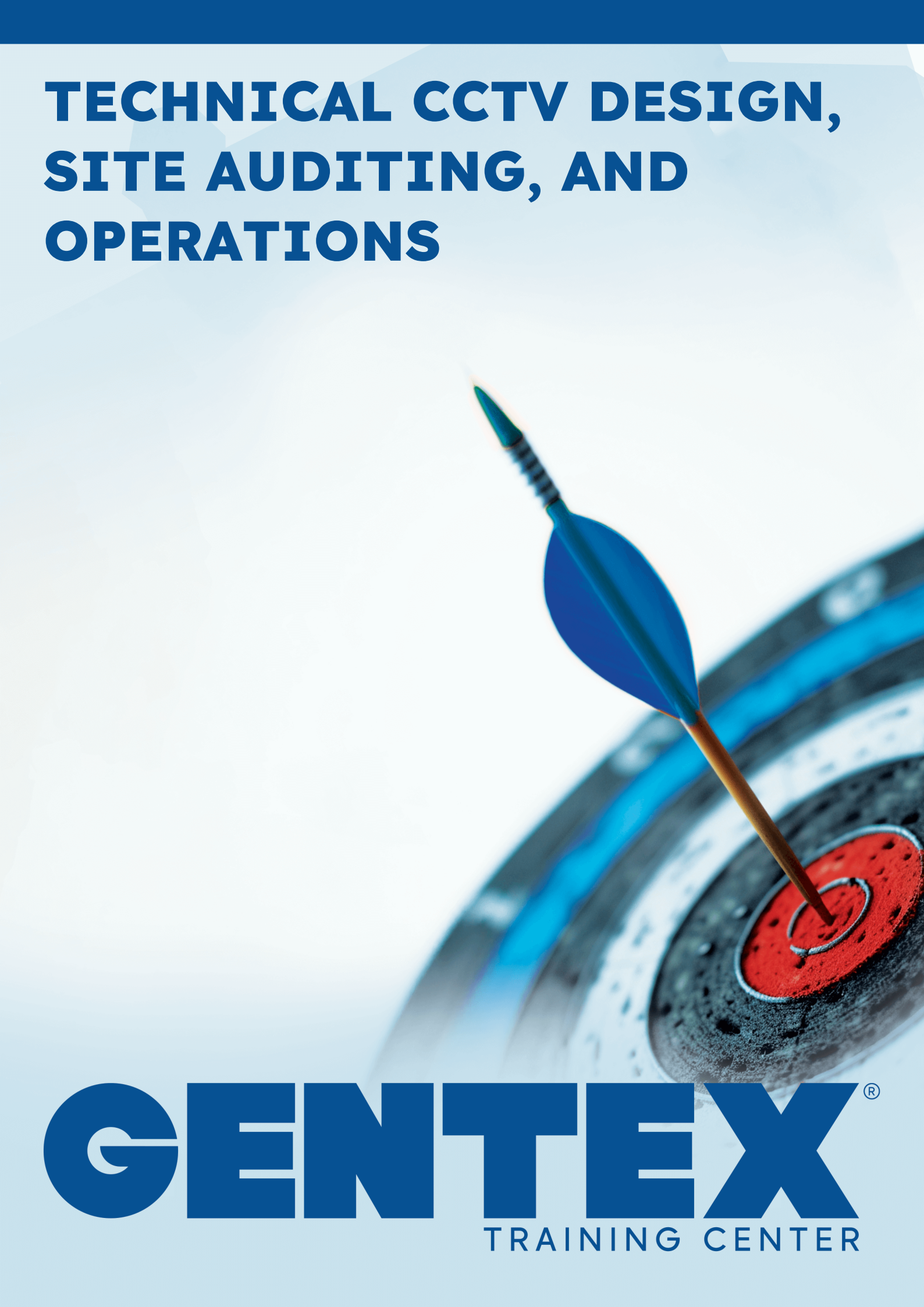
TECHNICAL CCTV DESIGN, SITE AUDITING, AND OPERATIONS



GENTEX®
TRAINING CENTER

GENTEX Training Center LLC | Orlando - FL, USA
Info@gentextraining.com

Introduction

Technical CCTV Design, Site Auditing, and Operations Training Course prepares security and technical professionals to design, audit, and run modern surveillance systems end to end. Participants work through CCTV fundamentals and camera technology, lens and field-of-view calculation, lighting and image quality, network design and video management systems, storage and retention planning, site auditing and system assessment, and operations, maintenance, and cybersecurity of video systems as one connected discipline. The programme links the operational requirement a site has with the design and evidence quality that satisfies it. As a result, learners gain a practical method for CCTV work. Furthermore, the course strengthens technical judgement, audit discipline, and system reliability.

Technical CCTV Design, Site Auditing, and Operations Course Objectives

- Explain CCTV system architecture and component roles.
- Apply camera selection by sensor, resolution, and frame rate.
- Apply lens calculation and pixel density for identification purposes.
- Apply lighting, WDR, and image quality assessment methods.
- Apply network design, bandwidth, and storage calculations.
- Apply video management system (VMS) configuration and analytics.
- Apply ONVIF, IP standards, and interoperability requirements.
- Conduct site surveys and CCTV system audits.
- Apply cybersecurity hardening for cameras and recorders.
- Apply operations, maintenance, and fault diagnosis practice.

Course Methodology

GENTEX® TRAINING CENTER

- Interactive sessions built on real CCTV design and audit cases.
- Workshops on camera selection, lens calculation, and storage sizing.
- Group exercises on site survey reports and system gap analysis.
- Hands-on practice with design sheets, audit checklists, and coverage plans.
- Simulation of a site audit and a camera placement walkthrough.
- Facilitator coaching and peer review on personal design and audit plans.

Who Should Take This Course

- Security engineers and electronic security specialists.
- CCTV designers, integrators, and system technicians.
- Security managers and operations supervisors.
- Facilities and physical security staff.
- IT and network staff supporting video systems.
- Consultants and auditors assessing surveillance systems.

Technical CCTV Design, Site Auditing, and Operations Course Outlines

Day 1: CCTV Fundamentals and Camera Technology

- CCTV system architecture and component functions.
- Analogue versus IP camera technology.
- Sensor types, resolution, and frame rate selection.
- Camera form factors: dome, bullet, PTZ, and panoramic.
- Day/night, infrared, and thermal imaging basics.
- Environmental rating, housing, and installation conditions.

- Case discussion: a system installed well and still unusable.

Day 2: Optics, Lighting, and Image Quality

- Lens types, focal length, and field of view.
- Pixel density calculation for identification and recognition.
- Coverage planning, camera height, and angle.
- Lighting conditions, glare, backlight, and WDR.
- Exposure, shutter, and gain interaction.
- Measurement of image quality against purpose.
- Workshop: calculating coverage and pixel density for a site.

Day 3: Network, Storage, and Video Management

- IP network fundamentals for video systems.
- Bandwidth, compression, and codec selection.
- Storage sizing, retention periods, and redundancy.
- Video management system (VMS) architecture and licensing.
- Video analytics, alarms, and event integration.
- ONVIF standards and interoperability requirements.
- Exercise: sizing storage and network for a CCTV project.

Day 4: Site Auditing and System Assessment

- Site survey method and requirement gathering.
- Auditing coverage against the operational requirement.
- Testing image quality, recording, and playback.
- Verifying retention, exports, and evidence integrity.

- Auditing documentation, as-builts, and maintenance records.
- Gap analysis and corrective recommendations.
- Simulation: conducting a CCTV site audit.

Day 5: Operations, Maintenance, and Cybersecurity

- Daily operations, monitoring, and operator procedures.
- Preventive maintenance and fault diagnosis.
- Cybersecurity hardening for cameras, NVRs, and networks.
- Access control, firmware, and password management.
- Incident investigation and evidence handling.
- System lifecycle, upgrade planning, and documentation.
- Capstone: presenting a CCTV design and audit report.

Conclusion

By successfully completing Technical CCTV Design, Site Auditing, and Operations, participants will gain a practical command of CCTV architecture and camera technology, optics, lighting and image quality, network, storage and video management design, site survey and system auditing, and operations, maintenance and video system cybersecurity. They will acquire skills in camera and lens selection, storage and network sizing, site audit practice, and system hardening that produce surveillance systems fit for their purpose. Gentex Training Center designs the programme to help professionals design, audit and operate CCTV systems with confidence.

LEARN BOLD. **LEAD BEYOND**
GENTEX Training Center LLC | Orlando - FL, USA
Info@gentextraining.com

FAQs for the Technical CCTV Design, Site Auditing, and Operations course

Q1 What is the "Technical CCTV Design, Site Auditing, and Operations" course about?

It prepares security and technical professionals to design, audit, and run modern surveillance systems end to end. The course spans CCTV fundamentals and camera technology, optics, lighting and image quality, network, storage and video management, site auditing and system assessment, and operations, maintenance and cybersecurity.

Q2 What are the key benefits of the "Technical CCTV Design, Site Auditing, and Operations" course?

You gain a practical method for CCTV work that links the operational requirement a site has with the design and evidence quality that satisfies it. The course improves camera and lens selection, strengthens storage and network sizing, sharpens site audit and coverage assessment, and gives you operations, maintenance and hardening practice that keeps systems reliable and evidence usable.

Q3 What skills will I gain from the "Technical CCTV Design, Site Auditing, and Operations" course?

You will develop four core skills: CCTV system design with camera and lens selection, coverage and image quality assessment, network and storage sizing with video management configuration, and site auditing with operations, maintenance and system hardening.

GENTEX® TRAINING CENTER

GENTEX Training Center LLC | Orlando - FL, USA
Info@gentextraining.com

Q4 What tools, methods, or standards are covered in the "Technical CCTV Design, Site Auditing, and Operations" course?

The course covers CCTV system architecture and component functions, analogue versus IP camera technology, sensor types, resolution and frame rate selection, camera form factors across dome, bullet, PTZ and panoramic, day/night, infrared and thermal imaging basics, environmental rating, housing and installation conditions, lens types, focal length and field of view, pixel density calculation for identification and recognition, coverage planning, camera height and angle, lighting conditions, glare, backlight and WDR, exposure, shutter and gain interaction, image quality measurement against purpose, IP network fundamentals for video systems, bandwidth, compression and codec selection, storage sizing, retention periods and redundancy, video management system (VMS) architecture and licensing, video analytics, alarms and event integration, ONVIF standards and interoperability requirements, site survey method and requirement gathering, auditing coverage against the operational requirement, testing image quality, recording and playback, verifying retention, exports and evidence integrity, auditing documentation, as-builts and maintenance records, gap analysis and corrective recommendations, daily operations, monitoring and operator procedures, preventive maintenance and fault diagnosis, cybersecurity hardening for cameras, NVRs and networks, access control, firmware and password management, incident investigation and evidence handling, and system lifecycle, upgrade planning and documentation.

GENTEX Training Center LLC | Orlando - FL, USA
Info@gentextraining.com

Q5 How is the "Technical CCTV Design, Site Auditing, and Operations" course applied in real-world practice?

Participants apply it to real work such as calculating coverage and pixel density for a site, sizing storage and network for a CCTV project, preparing a camera placement and coverage plan, conducting a CCTV site audit against the operational requirement, verifying recording, retention and evidence integrity, hardening cameras and recorders, and presenting a design and audit report. The same methods support maintenance planning and system upgrade decisions.