

Design of Control Room and Operations Center Infrastructure

London (UK)

21 - 25 September 2026

UK Training

PARTNER



Design of Control Room and Operations Center Infrastructure

Code: IT32 From: 21 - 25 September 2026 City: London (UK) Fees: 6100 Pound

Introduction

Modern organizations increasingly rely on control rooms and operations centers to manage critical activities, monitor assets, coordinate responses, and support real-time decision-making. Whether in oil and gas, utilities, transportation, telecommunications, security operations, emergency management, or government sectors, the effectiveness of a control room is directly influenced by the quality of its design and infrastructure.

The Design of Control Room and Operations Center Infrastructure course provides a comprehensive framework for planning, designing, and developing modern control rooms and operations centers that support operational excellence and continuous situational awareness. Effective control room design extends beyond equipment selection. It requires the integration of architectural planning, technical infrastructure, human factors engineering, display technologies, environmental controls, and operational workflows into a single cohesive environment.

This course focuses on both the architectural and technical dimensions of control room infrastructure. Participants will learn how to design ergonomic workspaces, optimize screen placement and viewing angles, establish environmental control requirements, and develop technical architectures that support reliability, scalability, and operational efficiency.

The course is designed for engineers, project managers, facility planners, operations managers, infrastructure specialists, and decision-makers involved in the planning, modernization, or management of operations centers and control room environments.

By the end of the program, participants will possess the knowledge required to design a fully integrated control room or operations center based on international standards, operational requirements, and industry best practices.

Course Objectives

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

- Understand the strategic role of control rooms and operations centers.
- Identify key design principles for modern control room environments.
- Analyze operational requirements before initiating infrastructure design.
- Develop architectural layouts that support operational efficiency.
- Design ergonomic workstations and operator environments.
- Evaluate lighting requirements for control room operations.
- Assess acoustic design and sound isolation requirements.
- Apply temperature, humidity, and environmental control standards.
- Select appropriate flooring systems for operational environments.
- Design effective video wall and display screen layouts.
- Determine optimal screen positioning and viewing distances.
- Evaluate display technologies and visualization solutions.
- Select suitable technical equipment and operator consoles.
- Understand network, communication, and system infrastructure requirements.

UK Training
PARTNER



- Develop integrated technical architecture for operations centers.
- Apply resilience, redundancy, and business continuity principles.
- Assess cybersecurity and physical security requirements.
- Align control room infrastructure with operational objectives.
- Evaluate compliance with industry standards and best practices.
- Develop complete control room infrastructure design frameworks.

Course Outlines

Day 1: Fundamentals of Control Room and Operations Center Design

- Strategic functions of control rooms and operations centers.
- Types of operations centers and their applications.
- Operational requirements analysis.
- Understanding stakeholder needs.
- International standards and design principles.
- Human factors and operator performance considerations.
- Control room lifecycle planning.
- Space utilization strategies.
- Infrastructure planning methodologies.
- Design challenges and operational constraints.

Day 2: Architectural Design and Environmental Infrastructure

- Architectural planning for control rooms.
- Layout development and space optimization.
- Ergonomic workstation design.
- Operator visibility and sightline requirements.
- Lighting design principles and standards.
- Acoustic treatment and sound isolation systems.
- Thermal comfort and environmental controls.
- Humidity management and air quality considerations.
- Flooring systems and cable management requirements.
- Safety and accessibility considerations.

Day 3: Display Systems and Visualization Technologies

- Principles of operational visualization.
- Video wall design methodologies.
- Display screen technologies and selection criteria.
- Screen sizing and positioning requirements.
- Viewing angles and operator visibility analysis.
- Multi-screen environment design.
- Command and control visualization systems.
- Information hierarchy and visual prioritization.
- Display integration strategies.
- Future trends in visualization technologies.

Day 4: Technical Infrastructure and System Architecture



- Technical architecture for operations centers.
- Network infrastructure requirements.
- Communication systems integration.
- Data management and system interoperability.
- Control systems and monitoring platforms.
- Audio-visual system integration.
- Redundancy and resilience design.
- Power infrastructure and backup systems.
- Physical security integration.
- Cybersecurity considerations for operations centers.

Day 5: Integrated Control Room Design and Infrastructure Planning

- Developing end-to-end control room infrastructure frameworks.
- Aligning architecture with operational workflows.
- Capacity planning and scalability considerations.
- Business continuity and disaster recovery requirements.
- Infrastructure performance evaluation.
- Risk assessment and mitigation planning.
- Project implementation planning.
- Design review and validation methodologies.
- International best practices and benchmarking.
- Final integrated control room design assessment.

Why Attend this Course: Wins & Losses!

- Gain a comprehensive understanding of control room infrastructure design.
- Improve the ability to plan modern operations centers.
- Strengthen architectural and technical design capabilities.
- Enhance knowledge of environmental and ergonomic requirements.
- Improve decision-making related to display technologies and visualization systems.
- Develop expertise in technical infrastructure integration.
- Strengthen understanding of resilience and business continuity requirements.
- Improve coordination between operational and technical stakeholders.
- Support more efficient and reliable control room operations.
- Reduce design risks and infrastructure shortcomings.

Conclusion

The Design of Control Room and Operations Center Infrastructure course provides a structured and comprehensive approach to designing modern operational environments that support continuous monitoring, coordination, decision-making, and operational control. Effective control room design requires the integration of architectural planning, environmental considerations, technical infrastructure, visualization systems, and operational requirements into a unified framework.

The course begins by establishing a strong understanding of control room functions, stakeholder requirements, and





design principles. It then examines architectural considerations, including workspace design, lighting, acoustics, environmental controls, flooring systems, and operator ergonomics. These elements form the foundation for creating environments that support productivity, situational awareness, and long-term operational effectiveness.

Participants then explore display technologies, video wall configurations, visualization strategies, and screen positioning methodologies that enable operators to access and interpret critical information efficiently. The program also addresses technical infrastructure requirements, including networking, communications, monitoring systems, power systems, redundancy, security, and cybersecurity considerations.

The final stage focuses on integrating all design components into a cohesive control room infrastructure strategy that supports operational objectives, scalability, resilience, and business continuity. Through a systematic examination of industry standards, design methodologies, and infrastructure planning frameworks, participants develop the capability to design and evaluate modern control rooms and operations centers that meet current and future operational demands.



Blackbird Training Clients



MANNAI Trading
Company WLL,
Qatar



Alumina Corporation
Guinea



Booking.com
Netherlands



Oxfam GB International
Organization,
Yemen



Capital Markets
Authority,
Kuwait



Waltersmith Petroman Oil Limited
Nigeria



Qatar National Bank
(QNB),
Qatar



Qatar Foundation,
Qatar



AFRICAN UNION ADVISORY
BOARD ON CORRUPTION,
Tanzania



KFAS
Kuwait



Reserve Bank of
Malawi,
Malawi



Central Bank of Nigeria
Nigeria



Ministry of Interior,
KSA



Mabruk Oil Company
Libya



Saudi Electricity
Company,
KSA



BADAN PENGELOLA
KEUANGAN Haji,
Indonesia



NATO
Italy



ENI CORPORATE
UNIVERSITY,
Italy



Gulf Bank
Kuwait



General Organization for
Social Insurance
KSA



Defence Space Administration
Nigeria



National Industries
Group (Holding),
Kuwait



Hamad Medical
Corporation,
Qatar



USAID
Pakistan



STC Solutions,
KSA



North Oil company,



EKO Electricity



Oman Broadband



UNITED NATIONS
UN.



Authority for

UK Training
PARTNER



Blackbird Training Categories

Management & Admin

Entertainment & Leisure
Professional Skills
Finance, Accounting, Budgeting
Media & Public Relations
Project Management
Human Resources
Audit & Quality Assurance
Marketing, Sales, Customer Service
Secretary & Admin
Supply Chain & Logistics
Management & Leadership
Agile and Elevation

Technical Courses

Artificial Intelligence (AI)
Sustainability, ESG & Corporate Responsibility
Advanced Courses
Hospital Management
Public Sector
Special Workshops
Oil & Gas Engineering
Telecom Engineering
IT & IT Engineering
Health & Safety
Law and Contract Management
Customs & Safety
Aviation
C-Suite Training

