BLACKBIRD FOR TRAINING

Infrastructure and Digital Services

15 – 26 August 2027
Online

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Ref: 3254803_178346 **Date:** 15 – 26 August 2027 **Location:** Online **Fees:** 4900 GBP

Introduction

As the digital era reshapes how infrastructure supports economies, governments, and societies, integrating physical infrastructure with digital technologies has become essential to deliver smart, secure, and sustainable services. This comprehensive training course explores the key elements of digital infrastructure development, including design, implementation, and management. Participants will learn about global infrastructure facility standards, policy frameworks, technology infrastructure trends, and real-world applications, empowering them to lead infrastructure innovation and drive digital transformation.

Through case studies, strategic planning exercises, and hands-on simulations, participants will understand the meaning of infrastructure, its impact on global infrastructure management, and best practices in infrastructure monitoring, infrastructure security, and sustainable infrastructure services.

Course Objectives

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

- Understand the foundational components and architecture of modern digital infrastructure, including its definition and global applications.
- Evaluate digital readiness and infrastructure maturity levels to enhance project planning and execution.
- Plan and deliver smart infrastructure projects that align with national goals and global infrastructure facility standards.
- Address cybersecurity, digital governance, and regulatory requirements in infrastructure management.
- Integrate sustainability, innovation, and emerging technologies into infrastructure development for long-term resilience.
- Apply IT infrastructure management techniques to optimize technology infrastructure for advanced digital services.



Course Outlines

Day 1: Introduction to Digital Infrastructure

- Defining digital infrastructure in the context of modern economies.
- Evolution of digital services and emerging technology ecosystems.
- Key enablers of digital infrastructure development: connectivity, cloud computing, data, and AI.
- Infrastructure lifecycle and digital maturity assessment.
- Global case studies of infrastructure projects and digital transformation initiatives.

Day 2: Strategic Planning and Policy Frameworks

- National strategies for infrastructure development and digital transformation.
- Government roles and Public-Private Partnership PPP models.
- Regulatory and legal frameworks for infrastructure services.
- Infrastructure master planning and long-term roadmaps for sustainable growth.
- Building institutional and organizational capacity for global infrastructure management.

Day 3: Connectivity and Network Infrastructure

- Planning and expanding broadband infrastructure for enhanced connectivity.
- 4G/5G deployment and wireless communication systems.
- Development of fiber optic networks and urban digital connectivity.
- Ensuring Network Quality of Service QoS and performance management.
- Building resilient and redundant digital networks for uninterrupted service.

Day 4: Data Centers and Cloud Infrastructure

- Designing scalable, secure, and energy-efficient data centers.
- Cloud service models: IaaS, PaaS, SaaS — advantages and risks.
- Leveraging Edge Computing and decentralized architecture for lower latency.
- Storage, backup, and high availability systems for disaster recovery.
- Managing cloud contracts, costs, and vendor relationships effectively.

Day 5: Internet of Things IoT and Smart Infrastructure

- Overview of smart cities, smart buildings, and smart mobility.
- Understanding IoT architecture and communication protocols.
- Sensor integration and real-time data monitoring for efficient operations.
- Tools for data processing, analytics, and visualization.
- Development of cyber-physical systems and infrastructure automation.



Day 6: Designing and Delivering Digital Public Services

- Building e-government platforms and integrated citizen services.
- Service design methodologies and inclusive access models.
- Strategies for mobile-first and omnichannel service delivery.
- Establishing Key Performance Indicators KPIs for measuring service quality.
- UX design and human-centered service transformation.

Day 7: Cybersecurity and Infrastructure Protection

- Identifying cyber threats targeting critical infrastructure.
- Establishing security frameworks and architecture design for protection.
- Incident detection, response, and recovery planning.
- Implementing Identity and Access Management IAM best practices.
- Ensuring compliance with ISO 27001, NIST, GDPR, and other global standards.

Day 8: Sustainability and Green Infrastructure

- Principles of sustainable infrastructure design in urban planning.
- Energy-efficient ICT infrastructure strategies for reduced carbon footprints.
- Development of green data centers and renewable energy integration.
- Climate resilience strategies in infrastructure planning.
- Conducting Environmental and Social Impact Assessments ESIA.

Day 9: Project Implementation and Monitoring

- Managing the full project lifecycle from feasibility to handover.
- Understanding procurement processes and infrastructure tenders.
- Applying monitoring, evaluation, and quality assurance frameworks.
- Change management in digital transformation projects.
- Developing communication and stakeholder engagement plans.

Day 10: Innovation, Emerging Trends, and Wrap-up

- The role of AI, blockchain, and emerging technologies in infrastructure development.
- Emphasizing Open Data, interoperability, and digital sovereignty.
- Future trends: Digital Twins, Metaverse, and Smart Cities.
- Final group presentations: Project proposals and action plans.
- Course review, evaluation, and certification ceremony.



Why Attend This Course: Wins & Losses!

- Lead National Infrastructure Initiatives: Gain practical skills to drive national infrastructure projects and digital infrastructure development.
- Secure and Future-Proof Systems: Learn to manage infrastructure security and build resilient networks.
- Integrate Innovation and Sustainability: Understand how to embed sustainability and emerging technologies into infrastructure planning.
- Align with National Goals: Develop the ability to create infrastructure master plans that align with national transformation goals.
- Access Global Best Practices: Get exposed to global infrastructure management models and real-world applications.

Conclusion

By the end of this course, participants will have the vision, knowledge, and tools to design and implement digital infrastructure that supports economic growth, citizen services, and long-term sustainability. They will be prepared to lead smart transformation projects that are secure, inclusive, and resilient to future challenges.

Join this course to become a leader in digital infrastructure development, drive innovation, and build sustainable, secure, and resilient infrastructure projects.

