COURSE AGENDA

Internet of Things (IoT)

A professional training programme focused on connected technologies, digital transformation and emerging technologies

15 Hours	eLearning	English
Duration	Primary format	Language

Primary format	eLearning course delivered through the digital learning platform
Available on request	Live trainer-led online delivery or in-house classroom training
Contact us	Request a tailored quote for your organisation

About Us

This course is delivered by a team with strong expertise in cybersecurity, digital resilience, emerging technologies and secure digital transformation. Our work is grounded in internationally recognised standards, European regulatory requirements and practical experience supporting organisations operating in complex, regulated and technology-driven environments.

INFOSEC CENTER holds ISO/IEC 27001 certification for information security management and, reflecting a structured and responsible approach to cybersecurity, data protection, governance and AI-enabled technologies. The organisation is also recognised as an **EASA-approved** training provider for specialised aviation cybersecurity training, aligned with European aviation safety and information security requirements.

Our innovation capacity has been recognised through the **Impact Stars distinction** at the **Deloitte Technology Fast 50**, awarded for the innovation delivered by our Machine Learning platform. This reflects our commitment to practical, high-impact technology solutions that combine advanced digital capabilities with real business and societal value.

We are actively connected to European digital innovation networks, including the **European DIGITAL SME Alliance** and the **BSC AI Factory Incubation Program**, contributing to secure, competitive and responsible digital transformation across Europe.

Our broader innovation platform, **FACTORY X.0**, supports the secure transformation of industrial and digital ecosystems by integrating cybersecurity, automation, artificial intelligence, industrial digitalisation and advanced technology adoption, with a focus on resilience, compliance and sustainable innovation.

We support organisations in understanding cyber risk, strengthening digital infrastructure, improving governance, preparing for regulatory compliance and building a stronger security culture across aviation, industry, education, public services and digital business.

Why This Course Matters

The Internet of Things is transforming how organisations collect data, monitor operations and optimise decision-making. By connecting devices, sensors, machines and digital platforms, IoT enables real-time visibility across physical and digital environments.

For modern organisations, IoT creates significant opportunities. It can improve operational efficiency, reduce maintenance costs, support predictive monitoring, enhance product and service innovation and enable new business models.

At the same time, IoT adoption introduces important responsibilities. Connected devices expand the attack surface, generate large volumes of data and require careful attention to cybersecurity, privacy, interoperability and governance. Successful IoT implementation therefore requires more than technical familiarity with devices and networks. Professionals must understand how IoT systems are designed, secured, deployed and used in real organisational contexts.

This course addresses that need directly. It provides learners with a structured understanding of IoT technologies, business applications, cybersecurity challenges, system implementation and IoT data analysis. The programme supports the development of practical, responsible and security-aware competencies for working with connected technologies across sectors.

Participants will leave this course equipped to:

- Understand the foundations, infrastructure and communication principles of IoT systems
- Recognise cybersecurity and data protection risks associated with connected devices
- Understand key steps in designing and implementing IoT systems
- Interpret and analyse data generated by IoT devices
- Apply IoT concepts responsibly in operational and digital transformation contexts

Course Overview

Course Title	Internet of Things (IoT)
Total Duration	15 Hours
Primary Delivery Format	eLearning course delivered through the digital learning platform
Optional Delivery Formats	Available on request as live trainer-led online delivery or in-house classroom training
Target Audience	Professionals, managers, technical staff and digital transformation teams seeking to understand, apply and govern IoT technologies in organisational environments
Prerequisites	No advanced technical background required; basic digital literacy and general familiarity with business or operational processes are recommended
Language	English

Planning & Delivery Options

The standard version of this programme is structured as an eLearning course, allowing participants to progress through the agenda in a flexible and accessible format. This option is suitable for organisations that need scalable delivery, consistent learning materials and clear assessment through the digital platform.

At the client's request, the same course agenda can also be delivered with a live trainer, either online or in an in-house classroom format. These options are recommended when the organisation wants direct interaction with the trainer, applied discussions based on internal workflows or a more guided learning experience.

For organisational enrolment, adapted delivery or group implementation, please request a tailored quote.

Learning Approach

The learning approach is built on four pillars:

01 Conceptual Clarity

Each module opens with clear explanations of core concepts before moving to application. Learners build a solid understanding of what IoT is, how connected devices operate and why IoT matters for modern organisations.

02 Applied Learning

Case studies, scenario-based exercises, examples of connected systems and practical implementation discussions anchor abstract concepts in realistic professional contexts.

03 Security & Governance Integration

Cybersecurity, privacy, data protection and governance principles are embedded throughout the course, because responsible IoT adoption requires awareness of risk across devices, networks, platforms and data flows.

04 Progressive Assessment

Each module includes a knowledge check through the eLearning platform. A final comprehensive assessment consolidates learning across all modules and confirms understanding of the course content.

Detailed Course Agenda

Module 01 Introduction & Understanding of IoT

Learning Objectives

- Develop a clear understanding of the Internet of Things and its role in digital transformation.
- Review the core concepts, terminology and operating principles of IoT systems.
- Understand the main hardware and software components of IoT environments, including sensors, actuators, gateways, platforms and applications.
- Examine the infrastructure required to support IoT systems, including connectivity, cloud services, edge computing and data flows.
- Explore the main communication protocols used in IoT environments and understand their relevance to different use cases.
- Identify the benefits, limitations and implementation challenges associated with IoT adoption.

Tools & Methodology

eLearning modules, optional live trainer-led sessions.

Assessment: Knowledge test via the eLearning platform.

Module 02 IoT Applications in Business and Industry

Learning Objectives

- Understand how IoT can improve efficiency, productivity and operational visibility in organisational environments.
- Analyse the impact of IoT on business processes, industrial operations and service delivery.
- Explore practical IoT use cases in manufacturing, logistics, facilities management, healthcare, retail and other sectors.

- Identify how IoT can support cost reduction, predictive maintenance, quality improvement and resource optimisation.
- Examine how IoT can enable innovation, new products, new services and data-driven business models.

Tools & Methodology

eLearning modules, optional live trainer-led sessions, case studies.

Assessment: Knowledge test via the eLearning platform.

Module 03 Cybersecurity and Data Protection in IoT

Learning Objectives

- Understand the main cybersecurity challenges associated with IoT devices, networks and platforms.
- Identify common vulnerabilities in IoT environments, including weak authentication, insecure communication, poor device management and insufficient update mechanisms.
- Explore security standards, protocols and good practices relevant to IoT implementation.
- Understand the importance of data protection, privacy and confidentiality in IoT systems.
- Analyse how IoT data should be collected, transmitted, stored and processed securely.
- Apply practical strategies for reducing IoT-related risk, including access control, encryption, monitoring, segmentation and lifecycle management.

Tools & Methodology

eLearning modules, optional live trainer-led sessions, case studies.

Assessment: Knowledge test via the eLearning platform.

Module 04 Designing and Implementing IoT Systems

Learning Objectives

- Understand the stages involved in designing and implementing a functional IoT system.
- Define IoT system requirements based on operational needs, business objectives and technical constraints.
- Explore key IoT communication protocols such as MQTT, CoAP and other relevant standards.
- Understand wireless connectivity technologies used in IoT environments, including Wi-Fi, Bluetooth Low Energy, Zigbee and comparable solutions.
- Examine the role of cloud platforms, edge devices, gateways and application interfaces in IoT architectures.
- Apply structured design principles to support reliability, scalability, security and maintainability.
- Evaluate implementation risks and define appropriate testing, validation and deployment procedures

Tools & Methodology

eLearning modules, optional live trainer-led sessions, case studies.

Assessment: Knowledge test via the eLearning platform.

Module 05 IoT Data Analysis and Decision-Making

Learning Objectives

- Identify the main types of data generated by IoT devices, including sensor data, log data, operational data and user-generated data.
- Recognise the challenges of working with IoT data, including volume, velocity, variety, quality and reliability.

- Understand the role of data preprocessing in IoT, including cleaning, normalisation, missing data management and preparation for analysis.
- Understand predictive and prescriptive analytics in IoT, including how historical data can support forecasting and decision recommendations.
- Examine how machine learning techniques such as regression, classification and clustering can be applied to IoT scenarios.
- Understand the importance of dashboards, trend charts, heatmaps and other visualisation methods for communicating IoT insights.

Tools & Methodology

eLearning modules, optional live trainer-led sessions, case studies.

Assessment: Knowledge test via the eLearning platform.

Module 06 Course Closing & Consolidation

Learning Objectives

- Consolidate understanding across all five modules through a structured review of core IoT concepts, frameworks and applied knowledge.
- Prepare for the final assessment by revisiting the most important technical, business, security and data analysis themes covered throughout the programme.
- Reflect on how IoT can be applied responsibly in real organisational contexts.
- Receive personalised trainer feedback on learning progress and areas for further professional development when the course is delivered with trainer support.

Tools & Methodology

Final online assessment, optional trainer review session, individual feedback where applicable.

Assessment & Certification

Assessment in this course is continuous, formative and cumulative. Rather than relying on a single high-stakes examination, the programme uses a layered approach that supports learning throughout and ensures that the final certification reflects a genuine command of the material.

Assessment Type	Description
Module Knowledge Checks	Each content module is followed by a knowledge test delivered through the eLearning platform. These tests reinforce learning at the point of completion and allow learners to identify any gaps before progressing.
Final Assessment	A comprehensive online test covering all modules is completed at the end of the course. This assessment evaluates the learner's overall understanding and ability to apply key concepts across the programme.
Trainer Feedback	When trainer-led delivery is requested, live session interactions and final assessment performance can be reviewed by the course trainer, who provides structured feedback to support ongoing professional development.
Certificate of Completion	Participants who successfully complete the course and final assessment may receive a certificate of completion issued by INFOSEC CENTER, confirming participation and successful completion of the training programme.

Closing Note

The Internet of Things is not simply about connecting devices. It is about creating intelligent, data-driven environments where physical systems, digital platforms and organisational processes work together more effectively.

The organisations that benefit most from IoT are those that approach it with clear objectives, sound architecture, strong cybersecurity and a practical understanding of the data generated by connected systems. Responsible IoT adoption requires technical awareness, operational judgement and attention to privacy, resilience and long-term maintainability.

This course has been designed with that understanding at its core. It aims to prepare learners not only to understand IoT technologies, but to apply them responsibly in real organisational contexts, with the security awareness, governance orientation and analytical mindset required in modern digital environments.

We hope this programme supports your development as a confident, capable and responsible professional in an increasingly connected world.

We wish you a productive and insightful learning experience.

Primary format: eLearning course

Live trainer-led and in-house delivery available on request

Request a quote: contact@edkore.com