

Internet of Things

Master IoT fundamentals and transform business models with advanced skills



Transform your business with the Internet of Things

Acquire expert knowledge in IoT and learn to drive business innovation. This IoT module provides a solid understanding of IoT basics, applications, and their impact on business models.

Study IoT architecture, communication protocols, devices and data management techniques.

You'll also explore IoT security, connectivity options, and risk management. Additionally, develop project management skills and examine real-world case studies to see how IoT can revolutionise business models.

Learning objectives

The Internet of Things curriculum provides an in-depth understanding of IoT basics, applications, and their impact on business models. By the end of this module, students will be able to:

Evaluate IoT fundamentals like architecture, communication protocols, devices, sensors and data management, and their impact on business model innovation.

Analyse IoT connectivity options and networking technologies, identifying challenges and proposing solutions for business applications.

Assess IoT security, privacy and risk management, and propose strategies to address these concerns.

Design and manage IoT projects by integrating data analytics, cloud computing and edge computing to drive business model development.

Analyse real-world IoT case studies to identify best practices, emerging trends, and future challenges in IoT business model innovation.

Criteria — are you eligible?

- **Language proficiency:** Minimum C1 English proficiency, plus 2 years' work or education in an English-speaking environment. IELTS: 6.0; TOEFL PBT: 600; TOEFL CBT: 200; TOEFL iBT: 100
- **Education:** Relevant EQF Level 6 qualification required (eg STEM, economics). Without this you will have an interview and assessment to evaluate certifications, qualifications or professional experience.
**EQF levels explained*
- **Residency:** This EU-funded programme is open to all EU nationals with a passport or valid ID from one of the 27 EU countries.

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Opening opportunities for aspiring innovators

This course will appeal to professionals, students and industry stakeholders interested in IoT and its business applications. It's ideal for those pursuing careers as IoT developers, data analysts, IT project managers and business strategists.

Graduates will gain skills to innovate in tech-driven roles, manage IoT projects, and address security and data management challenges.



Experience interactive and engaging teaching methods

Teaching methods include lectures, guest lectures, seminars, case study analysis, and a flipped classroom approach. Both ongoing and final assessments will measure student progress. Ongoing assessments provide feedback to help improve your study pathway. Clear assessment rubrics and criteria will be provided for each topic.

Various assessment tools such as exams, assignments, projects, and exercises will directly measure your knowledge, skills, and competencies. The final grade consists of a 50% proctored written exam and a 50% end-of-term project.

Time commitment

- Classroom and demonstrations: 24 hours
- Practical work/tutorials: 24 hours
- Independent learning: 77 hours
- Total: 125 hours

Credit points

- 5 ECTS

Full course content

Subjects covered

Internet of Things is a 5 ECTS module that runs for 12 weeks, with three hours of class time each week. Here's a schedule of the topics we'll cover each week:

● IoT Fundamentals for Business

- Historical development
- Key concepts
- Applications across industries

● IoT Business Models and Strategies

- Value creation
- Monetization
- Competitive advantage
- Case studies

● IoT Architecture and Protocols

- Components
- Communication protocols
- Data management

● IoT Devices and Sensors

- Functions and applications
- Types of sensors, including motion sensors

● IoT Connectivity and Networking

- Connectivity options
- Networking technologies
- Challenges

● IoT Security and Privacy in Business

- Security concerns
- Mitigation strategies
- Business implications

● IoT Data Analytics for Business

- Data processing
- Storage
- Analysis techniques
- Tools and platforms

● IoT Cloud Computing for Business

- Cloud-based IoT platforms
- Services
- Benefits and challenges

● IoT Edge Computing for Business

- Benefits
- Challenges
- Use cases
- Fog computing

● IoT Project Management for Business

- Principles
- Practices
- Methodologies
- Risk management

● IoT Standards and Regulations for Business

- Industry standards
- Data protection
- Compliance

● IoT Business Model Development Case Studies and Future Trends

- Case studies
- Future trends
- Impact of emerging technologies such as AI and quantum computing