Digital 4 Business
Evolving your digital future

Prospectus

Digital4Business

# Joint Professional Master's Degree in Advanced Digital Technologies for Business

# Table of contents



## Modules

# Welcome to Digital4Business!

**It is with great pleasure that I welcome you to this prospectus for the Joint Professional Master's Degree in Advanced Technologies for Business — designed to shape the digital leaders of tomorrow.**

At Digital4Business, we're shaping future digital leaders. This fully online, flexible Master's connects you to Europe's digital economy — with modules spanning AI, cybersecurity, cloud and more. Built in collaboration with industry, government and academia, it's designed for real-world impact and high-demand roles.

Choose the format that fits your goals and schedule:

- Full 60-ECTS Master's
- 10-ECTS micro-credentials
- 5-ECTS standalone modules

Whether you're upskilling, switching careers or stepping into leadership, this ASIIN-accredited programme delivers job-ready skills and industry certifications. Join a European-wide initiative driving innovation, inclusion and transformation — and get ready to lead the change.

**Best regards,**
**Professor Horacio González-Vélez**
**Coordinator, DIGITAL4Business**

## When does it start?

**Application deadline:** August 15, 2025
**Course starts:** September 15, 2025
**Format:** 100% online, with full-time and flexible part-time paths
**Certification:** ASIIN-accredited Master's qualification
**Language:** English

## Programme fees

**Full-time Master's:** €5,200
**Part-time Master's:** €5,720
**Accelerated Master's:** €5,720
**Postgraduate Certificate:** €2,600 (grant-funded short course)
**Micro-credentials:** €1,573

- Instalment, early bird discount and funding options are available

## What is Digital4Business?

Digital4Business (D4B) is a revolutionary €19.9m EU co-funded online Master's programme designed to equip future digital leaders with cutting-edge skills. This Joint Professional Master's Degree in Advanced Technologies for Business merges academic excellence with real-world business relevance to provide you with the advanced digital knowledge that European companies need to thrive.

Whether you're looking to master AI, cybersecurity or digital transformation, D4B offers a flexible, market-led learning journey that's tailored to meet the current and future needs of SMEs across Europe.

## The Need for Digital4Business

The digital skills gap is growing, and Digital4Business is on a mission to close it. The EU will need 20 million skilled ICT professionals by 2030, but currently only 9 million have the necessary skills.

With 77% of EU companies struggling to find qualified workers, Digital4Business bridges this gap by delivering in-demand digital expertise. Whether you're looking to upskill or pivot your career, D4B is here to empower you with the digital competencies needed to drive innovation and stay ahead in the job market.

## Career paths — who's it for?

Digital4Business is designed for ambitious professionals, business leaders and graduates who want to excel in the digital age. Whether you're aiming for a leadership role, exploring new technologies or advancing your current career, this programme offers the practical skills and industry certifications to boost your employability.

Graduating from D4B will open doors to roles in AI, cybersecurity, data analytics, cloud computing and loads more, positioning you as a sought-after expert in Europe's evolving digital landscape.

## Unlock your future as a digital leader

**By the end of the programme, you will be able to:**

- Master key digital competencies like AI, cybersecurity, cloud computing and more.
- Earn internationally recognised academic qualifications and industry certifications.
- Be equipped to lead digital transformation and innovation in any business environment.
- Gain hands-on experience through real-world projects, hackathons and industry collaborations.

## Education model — how you will learn

Digital4Business offers a flexible learning experience that fits your lifestyle. Choose from various formats including:

- **Full-time Master's:** One year, two semesters of 30 ECTS each
- **Part-time Master's:** Two years, four semesters of 15 ECTS each
- **Accelerated part-time Master's:** One year, three semesters of 20 ECTS each
- **Micro-credentials and individual modules:** Flexible, stackable modular learning pathway.
- **Postgrad Certificate:** A recognised postgrad qualification earning 30 ECTS through flexible module learning.

With our 'Master's as a Service' model you can tailor your education through modular learning, combining online courses with physical workshops and networking. You'll have access to live lectures, industry projects and mentoring. Learning is practical, engaging and relevant to the modern digital world.

Digital4Business features one mandatory module (Digital Transformation), 12 other elective taught modules, and a project to practically apply course learning.

## Our university partners — a powerful education alliance

1. **University of Bologna (UNIBO):** The world's oldest university, pioneering education in innovation, research, and design
2. **The NOVA Information Management School (Nova IMS):** Driving AI innovation with interdisciplinary research and future-focused education.
3. **National College of Ireland (NCI):** Empowering students with digital skills for modern, global industries
4. **Linköping University (LIU):** Driving AI innovation with interdisciplinary research and future-focused education.

# The Digital4Business Consortium

Digital4Business is led by an innovative international Consortium made up of 15 leading partners from seven EU countries, all united behind the common goal of shaping the digital leaders of tomorrow. This collaboration brings together a diverse group of prestigious higher education institutions, research centres, digital agencies, training providers and industry leaders.

By combining expertise from different sectors, the Consortium creates a centralised hub for advanced digital skills learning, designed to empower individuals and drive Europe's digital future. Together, they are fostering an ecosystem where cutting-edge knowledge, practical training, and industry innovation converge.

# Student life

## A flexible learning experience with global connections

At Digital4Business, you'll enjoy the ultimate flexibility, learning from anywhere in the world while still feeling fully connected. Forget traditional classrooms — our programme is streamlined for your convenience, offering live lectures, interactive sessions and full access to academic staff and peers. You'll engage with a global network of learners, faculty and professionals, ensuring a rich, collaborative learning experience. Whether attending virtually or joining occasional physical networking events, hackathons or workshops, you'll have endless opportunities to connect, learn and grow. D4B combines convenience with real-world engagement.

## Learning without boundaries: inclusivity and mobility

D4B is more than just a virtual classroom — it's a global community. With no need to attend physical campuses, you can learn from expert faculty across multiple EU countries. While most mobility will be virtual, there will be exciting opportunities to attend events and networking sessions in person across Europe. Inclusivity is at the heart of our programme, with scholarships supporting students from diverse backgrounds. We also offer tailored support for underrepresented groups, promoting gender equality, cultural diversity, and empowering those from disadvantaged communities. Everyone is welcome here, and everyone can thrive.

## Boost your employability and career opportunities

At D4B, we’re focused on preparing you for the future. Through our Employability Strategy, you’ll have access to a variety of online and on-site events, including workshops, career fairs, and opportunities to connect with industry partners. Our Careers and Opportunities Service will help you sharpen your skills, explore new job opportunities, and even find pathways to further education. Whether you're aiming to advance in your current role or switch to a new career in the digital space, D4B is your gateway to success in the digital economy.

Digital Business
Evolving your digital future

Digital Transformation

# Lead digital change with innovative strategies

## Grasp essential concepts and strategies for digital innovation

Explore the evolving world of digital transformation with this in-depth module, an essential pillar of the Digital4Business Master's programme.

This course equips you to explore, analyse and master the key principles and strategies of digital transformation. You'll investigate forward-thinking business models, evaluate digital paradigms critically, and craft strategic resource plans to drive meaningful change. With hands-on activities and real-world simulations, you'll create and execute cutting-edge strategies.

Gain the expertise to lead and steer digital transformation and seize new opportunities in the evolving digital business environment. Join us and become a leader in digital transformation.

## Learning objectives

This engaging module is designed for business professionals, leaders and graduates all across Europe. It equips you with cutting-edge expertise in digital transformation. By the end of the course, you'll not only have a solid understanding of key concepts, but you will also be ready to lead innovative digital change. Here's what you'll learn:

**Analyse and synthesise** the key concepts and enablers of digital transformation.

**Critically evaluate** digital transformation paradigms and their impact on innovative business models.

**Assess and strategise** the deployment of strategic resources for digital transformation.

**Design and implement** advanced strategies for digital business transformation.

## Criteria — are you eligible?

- **Language proficiency:** Minimum B2 English proficiency, or 2 years' work or education in an English-speaking environment. IELTS: 6.0; TOEFL PBT: 600; TOEFL CBT: 200; TOEFL iBT: 100. Alternatively, proficiency may be assessed via a test or interview.

- **Education:** Relevant EQF Level 6 qualification required in a relevant field including but not limited to: computer science, IT, engineering, maths, business, or economics. Without this you will have an interview and assessment to evaluate certifications, qualifications or professional experience.
  *EQF levels explained

- **Residency:** This EU co-funded programme is open to all EU27, EEA, UK and Ukrainian nationals with a passport or valid ID from one of these countries.

Digital Transformation

## Part of the Digital4Business ecosystem

This engaging module is a key element of the Digital4Business programme, a €19.9m EU co-funded online Master's designed to develop the digital leaders and innovators of the future. Discover how digital transformation fuels business growth and efficiency, while gaining the skills needed to excel in the digital age.

## Revolutionise your learning with innovative teaching methods

The Digital Transformation module offers a state-of-the-art online learning experience, alternating between scheduled live sessions and flexible self-paced study, with learning materials provided virtually. Engage in dynamic live sessions and flexible self-paced activities, with group projects, hands-on workshops, and immersive lab experiences.

Track your progress with a cutting-edge e-portfolio. Leverage the benefits of work-based learning, problem-solving exercises, gamification, and flipped classroom techniques, all supported by advancements in AI. This innovative learning approach provides a practical, interactive environment, preparing you to excel and lead in the fast-changing digital business landscape.

# Full course content

**The Digital Transformation** module is a 10 ECTS course, over 12 weeks with 1.5 hours of live lectures per week, and 2 hours asynchronous online learning, with materials provided. Here's an overview of the topics to be covered:

- **Introduction to Digital Transformation**
  - Basic concepts of digital transformation.
  - Evolution stages of digital transformation.
  - Economic and social impacts.
  - Digital paradigms and platform economy.
  - Ethical issues in digital transformation.
  - Interdisciplinary connections.

- **Technologies and Innovations**
  - Emerging digital technologies (AI, Blockchain, IoT).
  - Strengths and weaknesses of main digital technologies.
  - Evolution of AI.

- **Big Data and Platform Society**
  - Platform-based business strategies.
  - Platform economy case studies.
  - Digital and data literacy.

- **Digital Competences**
  - Digital competences framework.
  - Digital communication skills and capabilities.
  - Upskilling and reskilling.

- **Sustainable Development Goals (SDGs) Framework and Digital Transformation**
  - Ethics and sustainability in the digital age.
  - UN SDGs.
  - Digital projects supporting SDGs.
  - Circular economy.
  - KPIs for digital sustainability.
  - CSR and social impact.

- **Digital Transformation Design: Methodologies and Tools**
  - Industry trends in digital transformation.
  - Tools and methodologies for organisational culture and innovation.
  - SWOT analysis.

## Opening up new digital opportunities

This module is ideal for business leaders, professionals and graduates seeking to excel in implementing effective digital strategies. It opens career paths in digital innovation management and leadership roles in technology-driven industries.

Our innovative Master's programme offers a diverse range of modules that complement the Digital Transformation course. Discover how you can enhance your expertise and advance your career by exploring the full spectrum of courses available at Digital4Business.

Digital Business
Evolving your digital future

Generative AI:

# Realising potential — from essential principles to breakthrough applications

## Master advanced AI techniques and real-world applications

Elevate your expertise in generative AI to shape the future of digital innovation. The Generative AI module is designed to prepare the digital leaders of tomorrow. This innovative programme offers a deep dive into generative AI technologies and their transformative impact on digital business.

In this module, you will master natural language processing (NLP) and transformer models, refine your skills in prompt engineering, automate tasks with AI, and embrace ethical practices in AI development. This comprehensive approach ensures you're equipped to lead in the AI-driven landscape.

## Learning objectives

This module equips students with the critical skills to analyse, design, and implement generative AI models, preparing them to drive innovation and create real-world business solutions across multiple sectors. You'll learn to:

**Analyse and differentiate** between core principles and mechanisms of generative AI technologies, including text, image, video, and code generation. (Transferable Skills: analytical thinking, critical thinking)

**Evaluate** recent advancements in generative AI through academic and industry research, understanding their applications and limitations. (Transferable skills: research and communication skills)

**Design and implement** effective prompt engineering strategies for optimising generative AI outputs in diverse contexts. (Transferable skills: problem solving, creativity)

**Develop competencies** to architect and integrate generative AI models into complex real-world applications, assessing their potential impact and effectiveness.

**Innovate** by identifying and exploiting opportunities for leveraging generative AI in creating novel business solutions across various sectors and activity domains.

## Criteria — are you eligible?

- **Language proficiency:** Minimum B2 English proficiency, or 2 years' work or education in an English-speaking environment. IELTS: 6.0; TOEFL PBT: 600; TOEFL CBT: 200; TOEFL iBT: 100. Alternatively, proficiency may be assessed via a test or interview.

- **Education:** Relevant EQF Level 6 qualification required in a relevant field including but not limited to: computer science, IT, engineering, maths, business, or economics. Without this you will have an interview and assessment to evaluate certifications, qualifications or professional experience.
*EQF levels explained

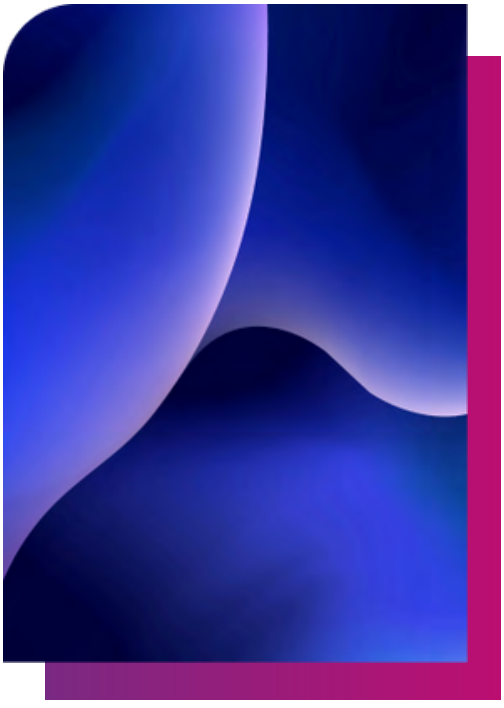
- **Residency:** This EU co-funded programme is open to all EU27, EEA, UK and Ukrainian nationals with a passport or valid ID from one of these countries.

Digital Transformation

## Real-world applications

Generative AI is poised to shape progress for generations. Its potential applications are virtually endless, from automating customer service to generating marketing content and developing AI-driven tools for software development.

Graduates will be prepared for roles such as AI specialists, data scientists, machine learning engineers, and digital transformation consultants.



## Innovative teaching for mastering digital business technologies

The module will be delivered using an innovative teaching approach, alternating between scheduled live sessions and flexible self-paced study, with learning materials provided through the virtual learning environment. A tutor, who is both an expert in the subject matter and a guide for the learning process, supports students throughout. Learning activities include live lectures, independent study and lab work.

Key teaching strategies include problem-based learning, gamification and the flipped classroom. These methods are enhanced by emerging technologies, such as artificial intelligence, to provide a richer learning experience through the digital platform.

**Time commitment**

- Classroom and demonstrations: 18 hours
- Practical work/tutorials: 18 hours
- Independent learning: 90 hours
- Total: 125 hours

**Credit points**

- 5 ECTS

# Full course content

**Generative AI for Business** is a 5 ECTS module with 3 hours per week, over 12 weeks — 1.5 hours' live classes and 1.5 hours' asynchronous study with provided materials. The following schedule outlines the topics covered each week:

- **Introduction to Generative AI**
  - Overview of generative AI, its evolution, and recent breakthroughs.
  - Introduction to key generative models,
  - including GANs, VAEs, and diffusion models.
- **Natural Language Processing Fundamentals**
  - Foundations of NLP, covering encoders and decoders.
- **Transformer Architectures**
  - A deep dive into transformer architectures like BERT, exploring their applications and significance in language models and generative AI.
- **Automating Work with Code and Content Generation (Part 1)**
  - Leveraging generative AI for automating tasks in software development, document creation (Excel, Word), and content generation.
- **Automating Work with Code and Content Generation (Part 2)**
  - Hands-on session focused on using generative AI models to create websites and web applications.
- **Automating Work with Code and Content Generation (Part 3)**
  - Developing mobile applications using generative AI models.
- **The Creative Potential of Generative Art (Part 1)**
  - Exploring the possibilities of generative art, including the creation of images, music, and videos using models like DALL-E, MuseNet, and GPT-3.
- **The Creative Potential of Generative Art (Part 2)**
  - Hands-on experience with prompt engineering for generative art, unlocking new avenues for human-AI creativity and collaboration.
- **Developing Responsibly with Generative AI (Part 1)**
  - Investigating bias and ethical concerns in synthetic content created by AI models.
- **Developing Responsibly with Generative AI (Part 2)**
  - Addressing transparency, accountability, and regulatory considerations in the development and deployment of generative AI systems.
- **Generative AI in Action**
  - Real-world case studies showcasing generative AI applications across industries like healthcare, finance, and transportation.
- **New Trends and Advances in Generative AI**
  - An exploration of cutting-edge generative AI research, emerging techniques like diffusion models and multimodal models, and novel applications across different industries.

Digital 4 Business
Evolving your digital future

Cloud Computing for Business

# Unlocking the power of cloud computing in digital transformation

## Deepen your knowledge of cloud technologies and applications

The Cloud Computing for Business module offers a comprehensive look at cloud technologies, highlighting their impact, challenges and advantages in digital business transformation. Students will explore the core principles of cloud computing, studying the frameworks and strategies essential for successful implementation.

The module also tackles governance and security concerns, helping students analyse cloud security architectures and deployment options. It covers a broad spectrum of cloud services, including storage, machine learning, computing, analytics, and quantum computing. Students will learn how to assess these services critically and create strategies to leverage them for business transformation.

## Learning objectives

This module equips students with the skills to evaluate core cloud computing principles, address security challenges, explore the impact of Fog and Edge Computing, and develop strategies to leverage diverse cloud services for driving digital business transformation.

**Assess** core principles, frameworks, development methodologies and tools for the adoption of Cloud Computing solutions to support and enable digital business transformation.

**Critically analyse** the governance and security challenges associated with cloud-based systems to identify and evaluate candidate cloud security architectures and deployment strategies.

**Evaluate** and assess the intersection and impact of Fog and Edge Computing in relation to Cloud Computing.

**Critically appraise** the wide range of existing and emerging cloud services (e.g., storage, machine learning, compute, analytics, quantum computing, etc.) and develop strategies to leverage such services for digital business transformation.

## Criteria — are you eligible?

- **Language proficiency:** Minimum B2 English proficiency, or 2 years' work or education in an English-speaking environment. IELTS: 6.0; TOEFL PBT: 600; TOEFL CBT: 200; TOEFL iBT: 100. Alternatively, proficiency may be assessed via a test or interview.

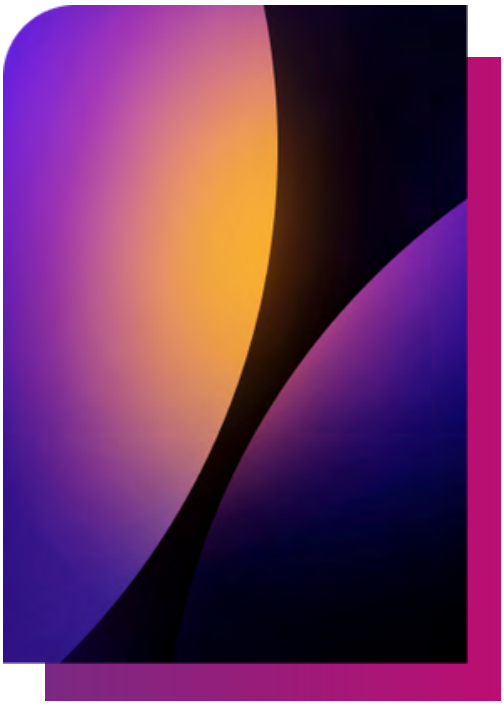
- **Education:** Relevant EQF Level 6 qualification required in a relevant field including but not limited to: computer science, IT, engineering, maths, business, or economics. Without this you will have an interview and assessment to evaluate certifications, qualifications or professional experience.
  *EQF levels explained

- **Residency:** This EU co-funded programme is open to all EU27, EEA, UK and Ukrainian nationals with a passport or valid ID from one of these countries.

Cloud Computing

# Opening up new digital opportunities

In this module, you will gain a deep understanding of cloud computing principles and technologies, learning how to design, implement, and manage effective cloud strategies tailored to business needs.
By the end of the module, you will be equipped for roles such as cloud architect, cloud security consultant, or digital transformation leader.



## Innovative teaching for mastering digital business technologies

The Cloud Computing for Business module prepares future digital leaders to harness scalable and flexible IT resources, driving innovation and improving business efficiency.

Blending live and self-paced learning, the module uses cutting-edge methods such as problem-based learning, gamification, and the flipped classroom model, all led by experienced tutors. Students will explore cloud principles, governance, security, and a variety of services, with AI enhancing their learning journey and enabling business transformation.

Assessment is based entirely on a project (100% of the marks), evaluating your comprehensive, hands-on understanding of the material.

**Time commitment**

- Classroom and demonstrations: 36 hours
- Practical work/tutorials: 24 hours
- Independent learning: 190 hours
- Total: 250 hours

**Credit points**

- 10 ECTS

# Full course content

This is a 10 ECTS module with 5 hours per week, across 12 weeks — 3 hours' live classes and 2 hours of asynchronous study with provided materials. Topics covered:

- **Cloud Computing Introduction**
  - Foundations of Cloud Computing
  - Service Models
  - Deployment Models
  - Cloud Technologies

- **Enterprise Digital Architecture & Digital Transformation**
  - Enterprise Systems Architecture
  - Functional/Non-functional architectural requirements
  - Information & Applications
  - Opportunities and Challenges
  - Business Model Innovation
  - Digital Transformation as a staged process
  - Business Readiness

- **Cloud Strategy for Digital Transformation**
  - Alignment with Business Goals
  - Key Performance Indicators (KPIs)
  - Service Level Agreements (SLAs)
  - Innovation and Enterprise Architecture on the Cloud
  - Performance, Interoperability, Scalability, Availability
  - Mobility, Analyticity, Usability

- **Cloud Adoption**
  - Cloud Adoption Frameworks
  - Organisational Change Management
  - Migration Scenarios
  - Hybrid Model
  - DevSecOps
  - Cloud Security I

- **Cloud Security I**
  - Cloud Security Concepts
  - Security for IaaS/PaaS/SaaS
  - Identity and Access Management (IAM)

- **Cloud Security II**
  - Intrusion Detection/Incident Response
  - Encryption and Key Management Systems (KMS)
  - Disaster Recovery and Business Continuity

- **Cloud Native**
  - Cloud Native concepts and Architectural
  - Considerations
  - Microservices, Events, Streams, APIs, and Data
  - Impact on Development and Deployment
  - Impact on Organisational Structures and Processes
  - Context-specific Patterns
  - Automation and Orchestration

- **Capacity Assessment & Optimisation**
  - Resource Utilisation
  - Information Lifecycle Management
  - Elasticity
  - Economic Considerations

- **Scope of Cloud Services**
  - Cloud Service Offerings
  - Data Services
  - Big Data Analytics
  - AI & ML Services
  - IoT Services
  - Quantum Computing Services

- **Fog & Edge Computing**
  - Architectural approaches to IoT and Edge Computing
  - Fog and Edge Architectures (e.g., OpenFog Reference Architecture)
  - Network Function Virtualization (NFV)
  - Software Defined Networking (SDN)
  - Recommendations from the National Institute of Standards and Technology (NIST)

- **FCloud Governance**
  - Data Protection and Privacy in the Cloud
  - Regulatory Compliance and Legal Considerations

- **Emerging Topics in Cloud Computing**
  - State-of-the-art Research
  - Contemporary Focus on Cloud Computing

Digital 4 Business
Evolving your digital future

Data Science for Business

# Lead digital change with innovative strategies

## Tackle real-world business challenges with innovative data science strategies

This module introduces advanced techniques for interpreting and extracting data-driven insights. You'll dive into innovative data science methods and algorithms that promote creative problem-solving and optimise models crucial for digital transformation. Learn how to apply statistical and machine learning techniques to synthesise insights, driving informed decision-making and clear communication.

You'll also explore advanced visualisation and business intelligence tools, gaining the ability to effectively communicate complex data insights. These skills will boost model performance, while fostering business innovation and success.

## Learning objectives

This module is central to digital transformation, equipping students to apply data science theories, concepts, and practices to solve real-world business problems. By the end of the course, you won't just master essential concepts — you'll be ready to drive innovative changes in the digital era. Here's what you'll achieve:

**Evaluate and integrate** data science principles to solve real-world business challenges, demonstrating creativity in data interpretation and insight extraction. (Transferable Skill: Critical Thinking)

**Synthesise insights** using statistical and machine learning techniques to make informed decisions, effectively communicating results to diverse audiences. (Transferable Skill: Communication)

**Apply** advanced data science methods and algorithms to develop and optimise models that address complex business problems. (Transferable Skill: Problem Solving)

**Design** and assess advanced visualisations, dashboards, and BI tools to deliver actionable insights and enhance business decision-making. (Transferable Skill: Service Orientation)

**Collaborate** within teams to design and implement data-driven solutions, fostering teamwork and adaptability. (Transferable Skill: Team Competence)

## Criteria — are you eligible?

- **Language proficiency:** Minimum B2 English proficiency, or 2 years' work or education in an English-speaking environment. IELTS: 6.0; TOEFL PBT: 600; TOEFL CBT: 200; TOEFL iBT: 100. Alternatively, proficiency may be assessed via a test or interview
- **Education:** Relevant EQF Level 6 qualification required in a relevant field including but not limited to: computer science, IT, engineering, maths, business, or economics. Without this you will have an interview and assessment to evaluate certifications, qualifications or professional experience.
  *EQF levels explained
- **Residency:** This EU co-funded programme is open to all EU27, EEA, UK and Ukrainian nationals with a passport or valid ID from one of these countries.

Data Science for Business

# Opening up new digital opportunities

This course is ideal for professionals seeking to deepen their data science expertise. It opens up careers in data analysis, machine learning, AI, and business intelligence. Graduates can pursue roles like data scientists, AI specialists, or business intelligence developers.

The whole programme offers a broad range of modules that complement the Data Science for Business course.

## Flexible online learning with expert guidance

This module is fully delivered online, offering a learning experience that combines live (synchronous) and self-paced (asynchronous) sessions. Led by expert tutors, you'll progress through dynamic lectures, individual study, and hands-on lab work.

Key methods include problem-based learning, gamification, and flipped classrooms. Using the latest in artificial intelligence, the module keeps you on the cutting edge of educational research and methods. Continuous assessments ensure steady progress, with projects and exams to apply data science concepts to real business problems.

**Time commitment**

- Classroom and demonstrations: 36 hours
- Practical work/tutorials: 36 hours
- Independent learning: 178 hours
- Total: 250 hours

**Credit points**

- 10 ECTS

# Full course content

**Data Science for Business** is a 10 ECTS module delivered over 6 hours per week for 12 weeks — 3 hours live class time and 3 hours asynchronous learning, with materials provided. An indicative schedule of topics is below:

- **Introduction to Data Science**
  - Overview of data science processes
  - Methods, tools and real-world applications

- **Introduction to Data Science**
  - Python programming basics
  - Data structures
  - Packages for data analysis

- **Data Collection and APIs**
  - APIs
  - Web scraping
  - Working with unstructured data sources

- **Databases and Data Warehousing**
  - Relational databases
  - SQL
  - ETL processes
  - Data warehousing principles

- **Data Pre-processing and Cleaning**
  - Handling missing data
  - Ootliers
  - Feature encoding
  - Normalisation

- **Exploratory Data Analysis**
  - Summary statistics
  - Visualisations
  - Identifying patterns

- **Digital Competences**
  - Regression
  - Classification
  - Forecasting methods

- **Machine Learning**
  - Supervised learning models like classification and regression

- **Advanced Machine Learning Methods**
  - Neural networks
  - Deep learning

- **Business Intelligence and Analytics**
  - BI process
  - Dashboards
  - Data storytelling
  - Predictive analytics

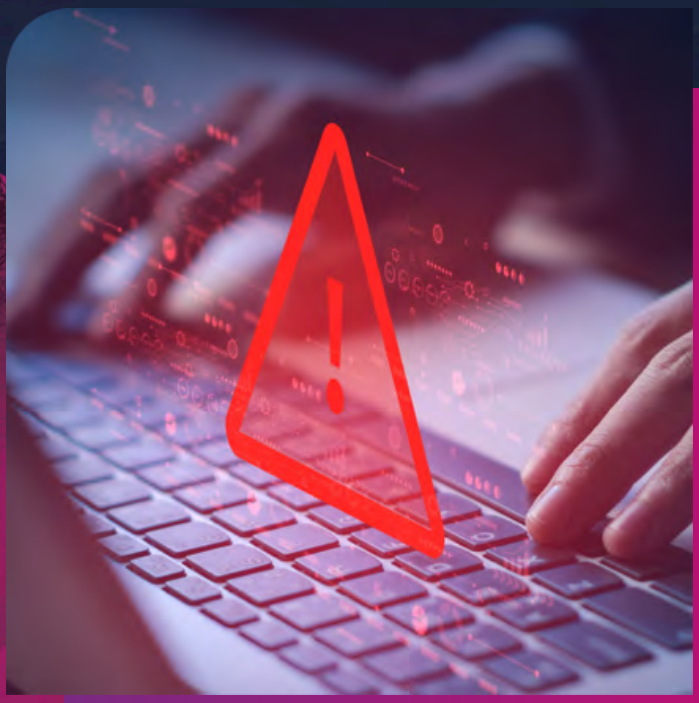
- **Data Visualisation and Dashboards**
  - Visual encodings
  - Interactive reports
  - Communicating insights

- **Ethics, Bias and Privacy in Data Science and Major Trends in ML and DS**
  - Responsible AI
  - Transparency
  - Ethical use of data
  - Major trends in ML and DS

Digital Business
Evolving your digital future

Cybersecurity for Business

# Become a cybersecurity expert and secure digital data systems



## Equip yourself with advanced techniques to counteract emerging cyber threats.

Master techniques to protect against evolving cyber threats. This module equips you to safeguard both personal and organisational data. Learn to detect vulnerabilities and prevent breaches in data systems. Create effective protection measures to keep your data secure from future threats.

Discover the ethical and legal complexities of cybersecurity, and gain the confidence to navigate this rapidly changing field. Become a key player in digital security today, ready to handle tomorrow's challenges.

## Learning objectives

This module equips students to detect vulnerabilities, craft protection strategies, and understand cybersecurity's legal and ethical aspects. By the end, you'll have learned to:

**Analyse and critically** evaluate vulnerabilities in personal and organisational data systems to identify potential security breaches and suggest mitigative strategies, fostering analytical thinking and attention to detail.

**Synthesise** and apply advanced concepts and techniques of cyber-attacks to simulate potential security breaches, demonstrating a comprehensive understanding of cyber threat landscapes and training problem-solving abilities and decision-making skills.

**Design and implement** robust strategies for the protection of personal and organisational data, utilising encryption techniques and security protocols to mitigate potential threats.

**Evaluate** and integrate tools and methodologies for the prevention and detection of cyber-attack incidents, Digital4BUSINESS 22 developing critical thinking skills and demonstrating an ability to anticipate and counteract emerging cyber threats.

**Critically assess** and debate cybersecurity legal and ethical issues, formulating well-justified recommendations for policy and practice that reflect an advanced understanding of the complexities and responsibilities in the field of cybersecurity, developing adaptability and continuous learning habits in a rapidly evolving field.

## Criteria — are you eligible?

- **Language proficiency:** Minimum B2 English proficiency, or 2 years' work or education in an English-speaking environment. IELTS: 6.0; TOEFL PBT: 600; TOEFL CBT: 200; TOEFL iBT: 100. Alternatively, proficiency may be assessed via a test or interview.

- **Education:** Relevant EQF Level 6 qualification required in a relevant field including but not limited to: computer science, IT, engineering, maths, business, or economics. Without this you will have an interview and assessment to evaluate certifications, qualifications or professional experience.
  *EQF levels explained

- **Residency:** This EU co-funded programme is open to all EU27, EEA, UK and Ukrainian nationals with a passport or valid ID from one of these countries.

Cybersecurity for Business

## Unlock new cybersecurity career paths

The Digital4Business Cybersecurity module is designed for IT professionals and tech enthusiasts who want to progress in digital security, and also suits SME professionals in non-technical roles. It opens doors to careers in cybersecurity analysis, ethical hacking, data protection and more.

Our Master's programme as a whole includes a wide range of complementary modules to enhance your learning.

## Advanced online learning with expert guidance and emerging tools

This online module employs an innovative learning model, offering live lectures, self-paced study, and hands-on lab sessions with the guidance of expert tutors. You'll experience problem-based learning, gamification, and flipped classroom strategies, enhanced by artificial intelligence to enrich your education.

Assessments are continuous and final, involving exams, projects and assignments. Half of the assessment involves applying cybersecurity to real-world business issues, and the remaining 50% tests your comprehensive understanding of the subject.

**Time commitment**

- Classroom and demonstrations: 36 hours
- Practical work/tutorials: 24 hours
- Independent learning: 190 hours
- Total: 250 hours

**Credit points**

- 10 ECTS

# Full course content

**Cybersecurity for Business** is a 10 ECTS module with 5 hours per week, across 12 weeks — 3 hours' live classes and 2 hours' asynchronous study with provided materials. Topics covered:

- **Introduction to Cybersecurity**
  - Overview of cybersecurity, its importance, and the growing demand for professionals
  - Understanding online identity, data, and their significance to cybercriminals
  - Seminar on real-world cybersecurity challenges
- **Risk Management and Compliance**
  - Exploring the significance of safeguarding electronic information networks and data
  - Regulatory compliance requirements for business
  - Implementing risk assessments and developing risk mitigation strategies
  - Lab on security breach case studies
- **Network Security for Business**
  - Addressing software and hardware vulnerabilities, device, network, and cloud security
  - Implementing secure network infrastructure including best practices for securing wireless networks and remote access
  - Lab on securing the application landscape, incident response planning and security incidents management
- **Cyber Attacks: Concepts and Techniques**
  - Analysis of cyberattacks, identifying and classifying security vulnerabilities
  - Understanding endpoint security challenges in business environments
  - Securing IoT devices and other connected endpoints in business networks
  - Seminar on vulnerabilities and real-world use cases
- **Data and Privacy Protection**
  - Best practices for protecting computer devices, wireless networks, and online accounts
  - Implementing cryptographic methods for business data
  - Exploration of ethical implications and considerations in using AI and cryptography for data privacy protection
  - Practical exercises on implementing cryptographic techniques for privacy-preserving data sharing and analysis
  - Lab on data encryption and backup strategies
- **Organisational protection and cloud security for business**
  - Techniques for firewall configuration, port scanning, and certificate updates
  - Securing cloud services and data storage in public, private, and hybrid cloud environments
  - Identity and access management in the cloud
  - Data backup and disaster recovery planning for cloud-based systems
  - Lab on using tools for security monitoring
- **Cyberattack Detection and Cyberdefence**
  - Real-time attack detection, best security practices, and understanding botnets and the kill chain
  - Lab on behaviour-based security
- **Tools for incident prevention and detection**
  - Overview of CSIRT, security playbooks, IDS, and IPS
- **Cybersecurity legal issues**
  - Personal legal issues. Corporate Legal Issues.
  - International Law and Cybersecurity
- **Ethical Issues in Cybersecurity**
  - Overview of cybersecurity laws, regulations, and industry standards applicable to businesses
  - Understanding ethical considerations in cybersecurity decision-making
  - Addressing legal and ethical challenges related to incident response, data breaches, and privacy violations
  - Discussion on ethical considerations and the
  - role of professional organisations in cybersecurity ethics
- **Cyberwarfare**
  - Understanding cyberwarfare, its objectives, and impacts
- **Emerging Topics and Careers in Cybersecurity**
  - Exploration of AI in cyberattacks and defence, the geopolitical aspects of cyberspace, and blockchain technology

Digital 4 Business
Evolving your digital future

Business Programming

# Cutting-edge development skills that drive digital transformation

## Develop transformative solutions with essential coding skills

Master key programming concepts, design web and mobile apps, and lead software projects while integrating data science and machine learning. This module offers a deep dive into programming foundations and their application in business. Explore programming paradigms, languages and low-code/no-code development strategies for innovative solutions.

You'll also gain leadership skills in managing software projects, incorporating machine learning, and addressing business challenges through case studies. Analyse how programming drives business success and predict future trends in business development.

## Learning objectives

This module equips you with essential programming skills to transform business processes. By the end, you'll understand core concepts and apply them to drive impactful change. Here's what you'll achieve:

**Evaluate** programming fundamentals, paradigms, and languages to devise innovative approaches for solving business-specific challenges and developing data-driven business models.

**Design and implement** web and mobile applications using low-code/no-code strategies to innovate business operations and models. (Transferable Skills: Creativity, Analytical Skills)

**Demonstrate leadership** in managing software projects, applying debugging, testing, and version control techniques to ensure quality in business programming. (Transferable Skills: Leadership, Teamwork)

**Integrate** data science and machine learning techniques into business programming to predict and address business challenges through automation and data insights. (Transferable Skills: Analytical Thinking, Service Orientation)

**Analyse** programming case studies to critique their effectiveness in solving business challenges and anticipate trends in programming for business innovation. (Transferable Skills: Communication, Critical Thinking

## Criteria — are you eligible?

- **Language proficiency:** Minimum B2 English proficiency, or 2 years' work or education in an English-speaking environment. IELTS: 6.0; TOEFL PBT: 600; TOEFL CBT: 200; TOEFL iBT: 100. Alternatively, proficiency may be assessed via a test or interview
- **Education:** Relevant EQF Level 6 qualification required in a relevant field including but not limited to: computer science, IT, engineering, maths, business, or economics. Without this you will have an interview and assessment to evaluate certifications, qualifications or professional experience.
  *EQF levels explained
- **Residency:** This EU co-funded programme is open to all EU27, EEA, UK and Ukrainian nationals with a passport or valid ID from one of these countries.

Business Programming

# Empower your career with advanced skills

This module is for professionals, academics, and programming enthusiasts. It equips students with development, business analytics, and digital transformation.

Ideal for IT professionals, analysts, and developers, it enhances your ability to lead complex software projects, integrate data science and machine learning, and prepare for challenging tech roles.

## An innovative online learning experience

This module's online format combines live lectures, seminars, flipped classroom techniques, case study analysis, virtual labs and problem-based learning (PBL). Peer reviews and collaboration are integral parts of the experience.

Both formative and summative assessments monitor progress, providing feedback through assignments, projects, and exams. The final written test accounts for 100% of the grade, ensuring mastery of the business programming concepts needed to drive innovation.

**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

**Business Programming** is a 5 ECTS module that runs for 12 weeks, with 2 hours' live class time and 2 hours' asynchronous learning per week, with materials provided  Here's a schedule of the topics:

- **Introduction to Programming Concepts**
  - Basics of programming including algorithms,
  - data structures, and problem-solving techniques.
  - Foundation of software development for business applications.
- **Programming Paradigms and Languages**
  - Examination of different programming paradigms
  - (procedural, object-oriented, functional) and languages.
  - Discussion on selecting appropriate l
- **Business Model Development Using Programming**
  - Techniques for developing business models through programming.
  - Includes custom software solutions, automation, and leveraging data for decision-making.
- **Web Development for Business**
  - Fundamentals of web development focusing on HTML, CSS, and JavaScript.
  - Overview of both front-end and back-end development to create web applications for businesses.
- **Software Development Methodologies**
  - Overview of Agile, Scrum, and Waterfall methodologies.
  - Importance of project management and best practices in developing business software.
- **Introduction to Low-Code and No-Code Platforms**
  - Exploring low-code and no-code development platforms, highlighting their benefits and business use cases.
- **Advanced Low-Code and No-Code Development**
  - Deep dive into visual development environments and how they enable rapid application development with minimal coding.
- **Debugging and Testing Business Applications**
  - Techniques and tools for debugging and testing.
  - Includes unit testing, integration testing, and test-driven development tailored for business applications.
- **Version Control and Collaboration**
  - Importance of version control (e.g., Git) in software development.
  - Collaboration tools and techniques for teambased projects.
- **Mobile App Development for Business**
  - Overview of approaches to mobile app development (native, hybrid, cross-platform).
  - Tools and frameworks like React Native and Flutter for creating business applications.
- **Automating Business Processes through Programming**
  - Utilizing programming for business process automation.
  - Covers APIs, web scraping, and robotic process automation (RPA).
- **Case Studies and Future Trends**
  - Discussion of real-world case studies in business model development through programming.
  - Future trends including AI and quantum computing's impact on business.

Digital Business
Evolving your digital future

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:

**Critically analyse** IoT architectures and protocols, identifying their suitability for different business applications.

**Design and develop** IoT solutions to address specific business challenges, integrating hardware, software, and network components.

**Evaluate** the performance and scalability of IoT systems in real-world business scenarios, proposing improvements. Apply IoT data analytics techniques to derive actionable insights for business decision-making.

**Collaborate effectively** in teams to develop IoT solutions, enhancing team competences and communication skills.

## Criteria — are you eligible?

- **Language proficiency:** Minimum B2 English proficiency, or 2 years' work or education in an English-speaking environment. IELTS: 6.0; TOEFL PBT: 600; TOEFL CBT: 200; TOEFL iBT: 100. Alternatively, proficiency may be assessed via a test or interview.

- **Education:** Relevant EQF Level 6 qualification required in a relevant field including but not limited to: computer science, IT, engineering, maths, business, or economics. Without this you will have an interview and assessment to evaluate certifications, qualifications or professional experience.
  *EQF levels explained

- **Residency:** This EU co-funded programme is open to all EU27, EEA, UK and Ukrainian nationals with a passport or valid ID from one of these countries.

Internet of Things

## Opening opportunities for aspiring innovators

This module is aimed at professionals, students, and industry stakeholders interested in how IoT technologies can drive business innovation. It is designed for future IoT project managers, data analysts, business strategists, and professionals involved in digital transformation. Graduates will gain the ability to manage IoT projects, innovate with data-driven business models, and address critical challenges in IoT security and data management in a business environment.

## 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

**Internet of Things** is a 5 ECTS module that runs for 12 weeks, with 2 hours of live class time and 2 hours asynchronous content each week. Here's a schedule of the topics:

- **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

Digital Business
Evolving your digital future

Blockchain Technologies

# Evaluate blockchain's impact in modern business environments

# Evaluate blockchain's impact in modern business environments

Discover how emerging technologies are transforming business operations and creating a competitive advantage.

This module teaches the fundamentals of blockchain, including distributed ledgers, decentralisation, cryptocurrencies, and dApps. You'll explore the ethical and legal aspects of blockchain technology and see how businesses can harness it for strategic gain.

By the end of the module, you will be equipped to use blockchain effectively in business contexts.

## Learning objectives

This module guides students through the understanding and evaluation of blockchain's impact on modern business. It covers blockchain essentials like distributed ledgers, decentralisation, cryptocurrencies and dApps. Ethical and legal considerations are also addressed, highlighting how blockchain offers a competitive edge. By the end of the course, students will be able to:

**Critically assess** blockchain technologies and their revolutionary impact on financial systems, integrating analysis of core components and pioneering use cases.

**Analyse and differentiate** between blockchain protocols, addressing ethical, legal, and practical adoption challenges, to foresee the technology's evolving landscape.

**Develop** communication skills by presenting blockchain-based business solutions to stakeholders with varying levels of technical knowledge.

**Collaborate effectively** within multidisciplinary teams to design and implement a blockchain application, employing critical analysis to evaluate its infrastructure and applicability within various contexts.

**Strategise** blockchain integration within enterprises, synthesising technological and regulatory insights to navigate and leverage emerging opportunities.

## Criteria — are you eligible?

- **Language proficiency:** Minimum B2 English proficiency, or 2 years' work or education in an English-speaking environment. IELTS: 6.0; TOEFL PBT: 600; TOEFL CBT: 200; TOEFL iBT: 100. Alternatively, proficiency may be assessed via a test or interview.

- **Education:** Relevant EQF Level 6 qualification required in a relevant field including but not limited to: computer science, IT, engineering, maths, business, or economics. Without this you will have an interview and assessment to evaluate certifications, qualifications or professional experience.
  *EQF levels explained

- **Residency:** This EU co-funded programme is open to all EU27, EEA, UK and Ukrainian nationals with a passport or valid ID from one of these countries.

Blockchain Technologies

## New digital opportunities for D4B students

This module equips professionals and graduates with critical skills in blockchain strategy, design, and deployment. Covering protocols, DApps, smart contracts, and DeFi, it prepares learners for roles in fintech, cybersecurity, and beyond.

Graduates will evaluate blockchain's technical, legal, and ethical implications for businesses from SMEs to global enterprises.

## Embrace a new era of innovative digital learning

Teaching is fully online and includes both live (synchronous) and self-paced (asynchronous) activities. Expert tutors support students throughout the course. Learning involves live lectures, self-study, and hands-on labs.

Methods like problem-based learning, gamification and flipped classrooms are used, leveraging technologies like artificial intelligence. Progress is measured through ongoing and final assessments, including a project (50%) and a final test (50%).

**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

**Blockchain Technologies** is a 5 ECTS module delivered over four hours per week for 12 weeks — 2 hours of live, class time and 2 hours asynchronous content to be done in the student's own time. Schedule is outlined below:

- **Introduction**
  - Introduction to Blockchain and Cryptocurrency
  - Historical Context of Blockchain and Cryptocurrencies
  - Overview of Different Blockchain Types
  - Introduction to the Blockchain Stack and its Core Components
- **Blockchain Stack and Core Components**
  - In-depth Discussion on Web3 and Technological Fundamentals
  - Detailed Analysis of Block Composition and Consensus Mechanisms (POET/ POB/ POS/ POW)
  - Basics of Distributed Systems and Distributed Ledger Technology (DLT)
  - Cryptographic Foundations: Hashing and the Merkle Tree
- **Blockchain Management**
  - Principles of Decentralisation and Brewer's CAP Theorem
  - Examination of Public, Private, and Enterprise Blockchains
  - Business Case Development for Blockchain Applications
- **Cryptocurrencies and the Blockchain**
  - Handling Cryptocurrencies: Storage, Use, and Wallets
  - Exploration of Altcoins and Mining Processes
  - Overview of Recent Trends and Developments in the Cryptocurrency Space
- **Evolution of Blockchain**
  - Detailed Study on the Evolution and Revolution of Blockchain: From Bitcoin to Hyperledger
  - Discussion on Enterprise Blockchain, Digital Identities, and Current Use Cases
- **Security, Identity & Cryptography in Blockchain**
  - The CIA Triad in Blockchain: Confidentiality, Integrity, Authentication
  - Exploration of Symmetric and Asymmetric Encryption, Non-Repudiation, and Public/Private Keys
  - Hash Functions, Digital Signatures, Anonymity, and the Concept of Self-Sovereign Identity (SSI)
- **Blockchain Applications I - Bitcoin**
  - Comprehensive Overview of the Bitcoin System and Stack
  - Examination of Bitcoin Transactions, the P2P Network, and the Mining Process
  - Consensus Mechanisms: Proof of Work (POW)
- **Blockchain Applications II - Ethereum**
  - Comprehensive Overview of the Ethereum System
  - Smart Contracts, Decentralized Applications (DApps), and the Ethereum Virtual Machine (EVM)
  - Introduction to DAOs, Decentralized Finance (DeFi), and NFTs
- **DApp Development I**
  - Introduction to DApp Development Environments and the Web3 Stack
  - Basics of NodeJS and Express in the Context of Blockchain
- **DApp Development II**
  - Advanced Tools for DApp Development: Infura, RemixIDE, ERC Smart Contracts
  - Practical Use of Ganache, Truffle, and Blockchain APIs
- **Legal & Ethical Aspects of Blockchain**
  - Discussion on the Regulatory Landscape for Cryptocurrencies and Tokens
  - Anti-Money Laundering (AML), Counter-Terrorist Financing (CTF), Know Your Customer (KYC), and Know Your Transaction (KYT) Requirements
  - Ethical Considerations and Ongoing Legal Dynamics
- **Emerging Topics in Blockchain**
  - Exploration of Current Research Directions and Emerging Topics: CBDCs, Privacy, the Metaverse, and Quantum Computing's Impact on Blockchain

Digital Business
Evolving your digital future

Innovation

# Discover effective strategies to lead innovation and fuel business growth

## Master innovative research and leadership strategies for driving innovation

Develop a sharp understanding of how to effectively implement creative and innovative strategies through this Digital4Business Master's programme module.

By leveraging case studies and in-depth research, this module explores how to craft and execute innovative strategies that drive change at individual, team, and organisational levels, turning businesses into more dynamic and competitive forces.

Students will uncover why some strategies thrive while others face resistance. Going beyond measuring impact, this course provides actionable insights on learning from outcomes and sparking creativity to enhance processes and results.

## Learning objectives

TDesigned to develop a deep understanding of the creative development process and the strategic application of innovative methods across different contexts, the module will enable learners to understand, discuss, and summarise Innovation and the main Innovation Implementation strategies. By the completion of the module, you will be able to:

**Demonstrate** a critical awareness of the creative development process and the application of creative and innovative strategies in a variety of contexts.

**Evaluate and explore** various case studies and innovation techniques to help understand creative and innovative practices.

**Discern, critique, and apply** the various techniques to foster creative talent environments at an individual, team, and organisational level.

**Demonstrate** impacts and return on investment at an individual and organisational level.

**Create and explore** strategies to deliver the results of creative work in business.

## Criteria — are you eligible?

- **Language proficiency:** Minimum B2 English proficiency, or 2 years' work or education in an English-speaking environment. IELTS: 6.0; TOEFL PBT: 600; TOEFL CBT: 200; TOEFL iBT: 100. Alternatively, proficiency may be assessed via a test or interview.

- **Education:** Relevant EQF Level 6 qualification required in a relevant field including but not limited to: computer science, IT, engineering, maths, business, or economics. Without this you will have an interview and assessment to evaluate certifications, qualifications or professional experience.
*EQF levels explained

- **Residency:** This EU co-funded programme is open to all EU27, EEA, UK and Ukrainian nationals with a passport or valid ID from one of these countries.

Innovation

## Innovation opens doors to new possibilities

Business leaders looking to foster growth while building agile, creative teams will gain the strategies and insights they need.

In today's fast-evolving global landscape, businesses must adapt and evolve constantly. This requires leadership with a deep understanding of innovation principles and how to implement them at individual, team, and organisational levels.

## Immersive innovation powered by emerging technologies

This fully online module seamlessly integrates learning objectives with dynamic teaching. Innovative techniques like gamification, problem-based learning, and a flipped classroom format—where students review materials beforehand and use live class time for deeper exploration—ensure that student questions actively shape each session.

Students will participate in live lectures, independent study, and hands-on lab work. Cutting-edge technologies will be employed to enrich their learning experience, providing a firsthand understanding of digital innovation's transformative benefits.

**Time commitment**

- Classroom and demonstrations: 18 hours
- Practical work/tutorials: 12 hours
- Independent learning: 95 hours
- Total: 125 hours

**Credit points**

- 5 ECTS

# Full course content

**Innovation** is a 5 ECTS module delivered over 2.5 hours per week — 1.5 hours' live class time, and 1 hour asynchronous learning, with materials provided. An indicative schedule of topics is outlined below:

- **Fundamentals of Innovation I**
  - Creativity and Innovation: Introduction to creativity and its role in innovation.
  - Discussion on the creative process and techniques to foster creativity.
  - Examples of how creativity has driven significant technological advancements

- **Fundamentals of Innovation II**
  - Emotional Intelligence and Entrepreneurship: Definition and importance of emotional intelligence in entrepreneurship.
  - The role of emotional intelligence in decision-making leadership.
  - Practical exercises to develop emotional intelligence.

- **Innovation and Business Models I**
  - Innovation Management in Business: Introduction to innovation management principles and its role in businesses.
  - Identifying innovation drivers and their relationship with entrepreneurship.
  - Case studies of companies that have successfully implemented innovative business models.

- **Innovation and Business Models II**
  - Designing Innovative Business Models: Developing innovative business models for emerging technologies such as blockchain and 3D printing.
  - Assessing the financial and strategic implications of new business models.
  - Group exercises for creating and evaluating innovative business models.

- **Strategic Innovation and Entrepreneurial Leadership I**
  - Data-Driven Innovation and Product Design: Using data analysis and product design to drive innovation in entrepreneurship.
  - Practical examples of data-driven decision-making in business.
  - Case studies showcasing successful entrepreneurial ventures based on data and design.

- **Strategic Innovation and Entrepreneurial Leadership II**
  - Leading Collaborative Innovation Projects: Leading collaborative innovation projects and the role of entrepreneurial leadership.
  - Effective team dynamics and communication in innovation.
  - Learning from both successful and failed

- **Entrepreneurial Communication Strategies I**
  - Effective Communication for Technology: Developing persuasive communication strategies for technology-based ventures.
  - Using corporate storytelling and design thinking in technology-related communication.
  - Practical exercises on creating impactful communication plans.

- **Entrepreneurial Communication Strategies II**
  - Engaging Stakeholders through Corporate Stories: The power of corporate storytelling in engaging
  - stakeholders. Examples of successful corporate story-driven communication.
  - Group discussions on how to apply corporate stories to technology-driven ventures.

- **Solving Complex Problems I**
  - Problem-Solving in Technology: Applying problemsolving concepts to technological challenges, including machine learning and robotics.
  - Case studies demonstrating effective problemsolving strategies in the tech industry.
  - Group exercises for hands-on problem-solving in technology.

- **Solving Complex Problems II**
  - Leveraging Data Analysis and Simulations: Using data analysis and simulations to address complex technological problems.
  - Practical application of data-driven decision-making in technology.
  - Case studies on how data-driven solutions have driven innovation.

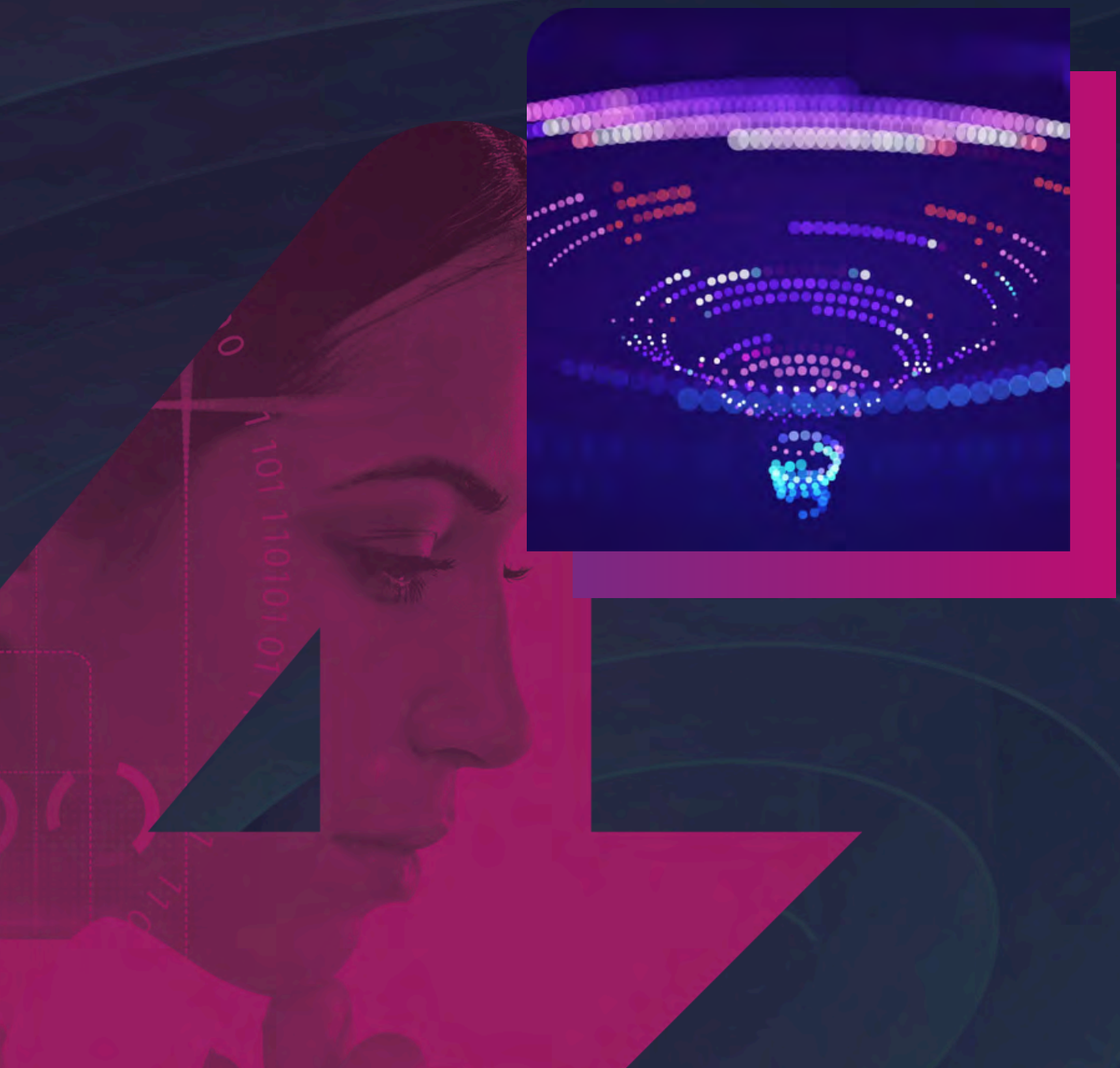
- **Between Innovation, Ethics, and Sustainability I**
  - Ethical Innovation and Sustainability: Exploring the intersection of innovation, ethics, and sustainability in technologies like renewable energy and sustainable mobility.
  - Identifying ethical and environmental challenges in technological solutions.
  - Examples of innovations that promote ethical and sustainable practices.

- **Between Innovation, Ethics, and Sustainability II**
  - Assessing Environmental and Social Impact: Methods for assessing the environmental and social impact of technologies.
  - Practical exercises in evaluating the sustainability of tech-driven solutions.
  - Case studies of technology initiatives that have positively impacted the environment and society.

Digital Business
Evolving your digital future

Quantum Computing

# Transform your business with advanced computational theory and practical skills



## Revolutionise business with advanced computational theory

Master cutting-edge technologies and develop practical skills for solving advanced computational problems.

Quantum computing is an evolving field that will revolutionise and expand computational power through quantum mechanics. With quantum systems now accessible via cloud platforms, this module offers a deep dive into the theoretical foundations and applications of quantum computing.

You'll gain hands-on skills in designing and applying algorithms to address computational challenges. The course also covers the current state and future possibilities of quantum computing, assessing its impact across industries and preparing you for its business use cases.

## Learning objectives

This module covers the core principles of quantum computing, offering practical skills to design and implement algorithms for tackling complex computational challenges. By course completion, you'll not only understand the foundational theories but also be equipped to drive innovation in today's digital landscape. Here's what you'll accomplish:

**Analyse quantum** computing principles and their application in solving complex business optimisation problems.

**Critically assess** various quantum algorithms for business use cases, such as cryptography and machine learning, and recommend suitable methodologies

**Design and implement** quantum-based solutions (e.g. circuit model of quantum gates) to real-world business problems using quantum programming frameworks.

**Research, evaluate, and communicate** technical quantum computing concepts effectively to non-technical stakeholders, emphasising business impact.

## Criteria — are you eligible?

- **Language proficiency:** Minimum B2 English proficiency, or 2 years' work or education in an English-speaking environment. IELTS: 6.0; TOEFL PBT: 600; TOEFL CBT: 200; TOEFL iBT: 100. Alternatively, proficiency may be assessed via a test or interview.

- **Education:** Relevant EQF Level 6 qualification required in a relevant field including but not limited to: computer science, IT, engineering, maths, business, or economics. Without this you will have an interview and assessment to evaluate certifications, qualifications or professional experience.
  *EQF levels explained

- **Residency:** This EU co-funded programme is open to all EU27, EEA, UK and Ukrainian nationals with a passport or valid ID from one of these countries.

Quantum Computing

# Unlock new career paths and digital opportunities

This module introduces professionals to the strategic potential of quantum computing across sectors like finance, logistics, and cybersecurity.

Learners will gain practical insight to support innovation and digital transformation, preparing for roles such as technology advisor or R&D specialist. Ideal for those aiming to stay ahead of emerging technological developments.

## An innovative online learning experience

This comprehensive online course integrates lectures, seminars, flipped classrooms, case studies, virtual labs, problem-based learning (PBL), peer reviews and collaborative work. Your progress is measured through both formative and summative assessments.

- Formative assessments offer valuable feedback to enhance your learning strategy, while exams, projects and exercises evaluate your knowledge, skills and competencies. Grading is 50% continuous assessment and 50% proctored exam.

**Time commitment**

- Classroom and demonstrations: 24 hours
- Practical work/tutorials: 24 hours
- Independent learning: 92 hours
- Total: 140 hours

**Credit points**

- 5 ECTS

# Full course content

**Quantum Computing** is a 5 ECTS module delivered over 12 weeks, 2 hours of live class time and 2 hours of asynchronous content to be done in the student's own time. Here's a schedule of the topics we'll cover:

- **Introduction**
  - Results from the theory of quantum mechanics
  - Spin and polarisation
  - Measurements/Observables
  - Randomness and probability
  - Bits and Qubits
  - Quantum parallelism and interference
- **Linear Vector Spaces, Hilbert Spaces, and Matrix Representations**
  - Review of linear spaces
  - Hilbert spaces
  - Dirac <bra|ket> notation
  - Operations and operators
  - The Bloch Sphere
  - Pauli Matrices
  - Orthogonal and unitary matrices
  - Operations and operators
  - Eigenvectors and eigenvalues
- **Quantum Circuits**
  - Logic Gates
  - Reversibility
  - Multi-qubit Gates
  - Diagrammatic representation
  - Deutsch's Algorithm
- **Programming for Quantum Computing**
  - Programming environments
  - Language support
  - Simulation
  - Quantum Computing cloud services
  - Coprocessor
- **Entanglement**
  - Entangled states
  - Bell's Inequalities
  - Using the CNOT gate
  - No Cloning Theorem
  - Quantum Teleportation
- **Quantum Information Theory**
  - Elements from the Classical Information Theory
  - Information and Entropy
  - Quantum Information Processing and Error-Correcting Codes
  - Quantum Communications Channels
- **Applications**
  - Quantum Cryptography
  - Quantum Key Distribution
  - Ekert Protocol
  - BB84 Protocol
  - Dense coding
- **Business / Domain Applications**
  - Applications of QC in Pharma, Finance, Cybersecurity, Machine Learning, Chemistry, etc.
  - Business Strategy & Innovation with QC
- **Quantum Fourier Transform**
  - Fourier Series
  - Discrete Fourier Transform
  - Quantum Fourier Transform
- **Quantum Algorithms**
  - Deutsch-Josza Algorithm
  - Simon's Algorithm
- **Quantum Algorithms**
  - Grover's Search Algorithm
  - Schor's Algorithm
- **Emerging Topics**
  - Quantum Hardware
  - Quantum Supremacy
  - Data Security
  - Quantum ML

Digital Business
Evolving your digital future

Data Governance and Ethics

# Lead with integrity through ethical data management in business

## Master ethical data management and regulatory compliance

Gain the skills to handle data responsibly while ensuring legal compliance and ethical practices in business operations.

This module delves into managing data within strict legal and ethical frameworks. You'll learn to assess various methods for acquiring, storing and transforming data, while understanding the complexities of data governance. It also equips you with strategies for managing business data ethically and effectively.

Additionally, the course covers the integration of artificial intelligence in data analysis, so you'll understand both the legal implications and technical requirements. It prepares future leaders to navigate the digital business landscape with a strong focus on ethical and societal responsibilities.

## Learning objectives

This module emphasises responsible data management, covering legal, ethical and regulatory frameworks. Students will develop skills to handle data ethically, assess frameworks, and grasp the influence of artificial intelligence in data analysis. Here's what you'll accomplish:

**Assess** and critically compare data governance and regulatory processes for data acquisition, storage, and transformation in diverse business contexts.

**Design and propose** solutions to business challenges using data governance strategies, emphasising regulatory compliance and ethical considerations.

**Assess and implement** effective data governance practices by applying appropriate methodologies such as gap analysis and risk assessment.

**Communicate** complex data governance and ethics issues effectively to diverse stakeholders, promoting ethical practices within organisations.

**Enhance** transparency and explainability of AI-generated data insights.

## Criteria — are you eligible?

- **Language proficiency:** Minimum B2 English proficiency, or 2 years' work or education in an English-speaking environment. IELTS: 6.0; TOEFL PBT: 600; TOEFL CBT: 200; TOEFL iBT: 100. Alternatively, proficiency may be assessed via a test or interview.

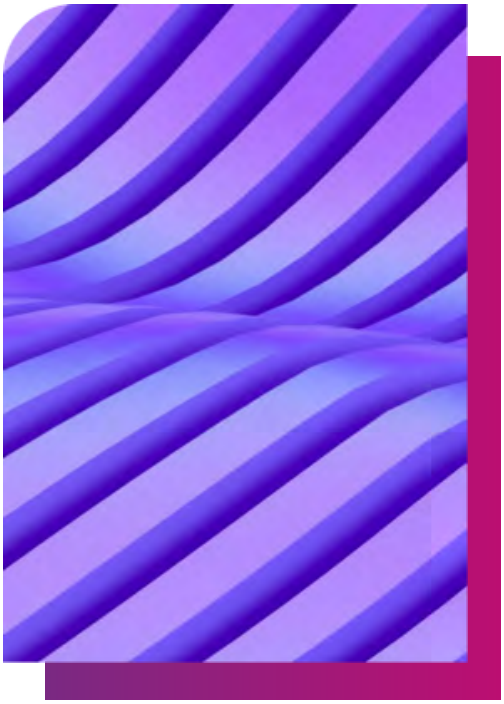
- **Education:** Relevant EQF Level 6 qualification required in a relevant field including but not limited to: computer science, IT, engineering, maths, business, or economics. Without this you will have an interview and assessment to evaluate certifications, qualifications or professional experience.
  *EQF levels explained

- **Residency:** This EU co-funded programme is open to all EU27, EEA, UK and Ukrainian nationals with a passport or valid ID from one of these countries.

Data Governance and Ethics

# Open doors with ethical data management and compliance skills

This course is ideal for managers, analysts, and decision-makers who want to understand data governance, privacy, and compliance without needing deep technical expertise. It also benefits tech-savvy professionals and IT teams working where data, innovation, and regulation meet—helping all participants manage data ethically and strategically to support their organisation's goals.



## A revolutionary online learning experience

This entirely online module blends cutting-edge teaching techniques with expert guidance. Students participate in live lectures, independent study and lab work. Core approaches include problem-based learning, gamification, and flipped classroom methods.

Advanced technologies like artificial intelligence enrich the digital learning environment, creating a highly interactive and immersive experience that fosters both deep comprehension and practical abilities. The module grade is assessed through 50% project and 50% proctored written exam.

**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

**Data Governance and Ethics** is a 5 ECTS module delivered over 12 weeks — 2 hours synchronous live class time, and 2 hours asynchronous content to be studied in students' own time. An indicative schedule of topics is outlined below:

- **Data Governance and Ethics**
  - Overview of data governance and ethics
  - Why data governance is important
  - Data governance definitions
- **Data and Metadata**
  - Introduction to data and metadata
  - Structured and unstructured data
  - Metadata types and roles
  - Data lifecycle
  - Data quality introduction
- **Data Risks, Integrity and Security**
  - Understanding data risk
  - Data integrity and information assurance
  - Organisational challenges; Data security
  - Cyber attacks
- **Data Governance Principles and Frameworks**
  - Examining policies, principles, rules, and procedures
  - Operating models
  - Roles and responsibilities
- **Execution Models and Metadata**
  - Decision-making in data governance
  - Execution models and scenarios
  - Data architecture
  - Metadata for governance
- **Data Regulatory Compliance, Privacy and Data Protection**
  - GDPR overview
  - Key concepts and definitions
  - Roles and responsibilities
  - Articles of relevance
  - Controllers vs Processors
- **Individual Data Rights and Data Breaches**
  - Data subject rights
  - Right to be forgotten
  - Right to data portability
  - Breach notification procedures
  - GDPR Articles
- **Ethics and Data in the Organisation**
  - Ethical frameworks
  - Corporate data ethics
  - Bias and discrimination
  - Data ethics in governance
- **Data Strategy and Value**
  - Developing a data strategy
  - Value creation from data
  - Strategic objectives and performance
  - Data as an asset
- **Implementing Governance**
  - Planning for implementation
  - Capability models
  - Barriers and drivers
  - Implementation lifecycle
- **AI Governance and Risk**
  - Overview of AI Governance
  - Risks from AI in data practices
  - Bias and discrimination
  - Regulatory frameworks
- **Future Trends in Data Governance**
  - Emerging technologies
  - Regulatory evolution
  - Cross-border governance
  - Evolving data roles

Digital Business
Evolving your digital future

Risk and Change Management
in Digital Business Environments

# Driving transformation with effective change management

## Manage risk and lead change

Learn how to analyse risks and use data-driven insights to ensure your business stays ahead in digital innovation.

In this module, you'll explore actionable strategies to cultivate a workplace culture that prioritises flexibility, agility and continuous learning. You'll apply key concepts of risk and change management tailored to your industry, gaining insight into how digital transformation reshapes business models and workforce dynamics.

The module emphasises communication, stakeholder engagement, and fostering a culture that embraces digital change. Through critical comparisons of digital business models, you will gain the skills to evaluate risks and opportunities, as well as the wider impact of digital disruption and innovation across industries.

## Learning objectives

This module equips students to successfully implement change management in digital transformation projects. Participants will critically assess digital business models and strategies, evaluate the related risks and opportunities, and gauge the broader effects of digital disruption across industries.

**Articulate** the core principles of risk and change management in digital environments, highlighting digital transformation dynamics and their impact on business models and workforce. (Transferable Skills: Critical Thinking, Communication)

**Apply** change management strategies effectively to digital transformation projects, emphasising stakeholder engagement, communication, and organisational culture development. (Transferable Skills: Leadership, Collaboration)

**Critically compare** digital business models and strategies to identify associated risks and opportunities and evaluate the impact of digital disruption and innovation. (Transferable Skills: Analytical Thinking, Problem Solving)

**Design and evaluate** digital transformation plans incorporating risk and change management strategies, fostering innovation and digital culture while ensuring compliance with ethical standards. (Transferable Skills: Creativity, Ethical Awareness)

## Criteria — are you eligible?

- **Language proficiency:** Minimum B2 English proficiency, or 2 years' work or education in an English-speaking environment. IELTS: 6.0; TOEFL PBT: 600; TOEFL CBT: 200; TOEFL iBT: 100. Alternatively, proficiency may be assessed via a test or interview.

- **Education:** Relevant EQF Level 6 qualification required in a relevant field including but not limited to: computer science, IT, engineering, maths, business, or economics. Without this you will have an interview and assessment to evaluate certifications, qualifications or professional experience.
  *EQF levels explained

- **Residency:** This EU co-funded programme is open to all EU27, EEA, UK and Ukrainian nationals with a passport or valid ID from one of these countries.

Risk and Change Management

## Learn with Digital4Business

This module targets business leaders aiming to propel their organisations to the forefront of transformation, as well as graduates ready to step into leadership roles in companies poised for meaningful change. It provides practical strategies to engage stakeholders and drive innovation. Change can be challenging, but the skills acquired in this course will empower students to lead with agility.

## Learn from industry experts and case studies

Gain valuable insights from guest lecturers, and industry leaders who provide unique perspectives on risk and change management. Through case studies, students analyse real-world scenarios. The seminar-based approach encourages collaboration and practical learning, as students apply these insights to their strategic thinking.

Regular assessments provide ongoing feedback. With clear rubrics and criteria, students are evaluated on various tasks including exams, assignments, projects, and activities, concluding with a proctored written exam.

**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

**Risk and Change Management in Digital Business Environments** is a 5 ECTS module delivered over 4 hours per week for 12 weeks — 2 hours of live classes and 2 hours of asynchronous study with provided materials. A schedule of topics is outlined below:

- **Introduction to Risk and Change Management**
  - Fundamentals of risk and change management within digital ecosystems.
  - Explore the dynamics of digital societies and technology trends, highlighting both challenges and opportunities in digital transformation.

- **Digital Transformation and Change Management**
  - Deep dive into digital transformation projects and the critical role of change management for their success.
  - Focus on effective communication, stakeholder engagement, and cultivating a supportive organisational culture.

- **Digital Business Models and Strategies**
  - Examination of prevalent digital business models and strategies, understanding their influence on industries, and the significance of innovation in spearheading digital transformation efforts

- **Digital Workforce and Workplace Transformation**
  - Investigation of digital technologies' impact on the workforce and workplace dynamics, including remote work, automation, and the use of collaboration tools.
  - Discuss the management of a digital workforce.

- **Risk Management in Digital Transformation**
  - Study of risk management within digital transformation contexts, focusing on risk identification, assessment, mitigation, and the formulation of comprehensive risk management plans.

- **Digital Disruption and Innovation**
  - Exploration of digital disruption effects on industries and the pivotal role of innovation in driving transformation, creating novel business models, and seizing new opportunities.

- **Agile and Adaptive Leadership in Digital Environments**
  - Insight into agile and adaptive leadership styles essential for digital transformation and change management, emphasising flexibility, resilience, and a commitment to lifelong learning.

- **Data-Driven Decision Making in Digital Environments**
  - Introduction to the significance of data-driven decision making in digital environments, including methodologies in data analytics, visualisation, and reporting tools.

- **Digital Ethics, Privacy, and Compliance**
  - Discussion on the ethical, privacy, and compliance challenges in digital environments, focusing on data protection, responsible tech use, and ethical guidelines development.

- **Building a Digital Culture and Fostering Innovation**
  - Examination of the elements comprising a digital culture and methods to nurture a digital mindset within organisations, encouraging collaboration, innovation, and continuous learning.

- **Digital Talent Management and Workforce Development**
  - Analysis of talent management strategies pivotal for digital transformation success, covering attraction, retention, development of digital talent, and the importance of upskilling and reskilling.

- **Risk and Change Management Case Studies and Future Trends**
  - Review of real-world case studies in risk and change management across various industries.
  - Discussion on future trends, potential challenges, and the impact of emerging technologies like AI and quantum computing.

Digital Business
Evolving your digital future

AI for Business

# Unlock business innovation with AI and machine learning mastery


## Streamline operations with AI strategies and ethical practices

This module equips you with critical skills in AI and machine learning, focusing on innovative applications, ethical considerations, and optimising business processes.

In this AI for Business module, you will explore foundational concepts in artificial intelligence and machine learning. Through a mix of theory and hands-on practice, you'll learn to design, develop and assess advanced machine learning models.

The curriculum covers real-world projects, strategic AI solutions, and emphasises ethical, sustainable AI practices. By mastering these technologies, you'll enhance decision-making, increase efficiency, and gain a competitive advantage in today's business environment. Become a leader in AI-driven business transformation.

## Learning objectives

In this AI for Business module, you will gain comprehensive expertise and practical skills in artificial intelligence and machine learning. By applying AI to real-world scenarios, you will drive innovation and implement ethical AI practices, supported by the following key learning outcomes:

**Analyse, synthesise, and innovate** within artificial intelligence and machine learning, emphasising critical understanding and the capability to advance the field.

**Design, train, and critically evaluate** advanced machine learning models, focusing on innovative data and optimisation strategies to boost performance in business applications.

**Employ innovative techniques** for rigorous machine learning model performance assessment, interpret results, and effectively communicate implications across various business contexts and to diverse stakeholders.

**Apply strategic thinking** in AI and ML for complex applications, assess effectiveness critically, propose innovative solutions or improvements, and improve problem-solving and decision-making skills.

**Teamwork** to develop AI solutions, enhancing collaboration skills, team competences, and service orientation towards addressing business needs.

**Critically explore** AI and machine learning's ethical, societal, and environmental impacts, and propose ethical, sustainable development and implementation practices within business environments.

## Criteria — are you eligible?

- **Language proficiency:** Minimum B2 English proficiency, or 2 years' work or education in an English-speaking environment. IELTS: 6.0; TOEFL PBT: 600; TOEFL CBT: 200; TOEFL iBT: 100. Alternatively, proficiency may be assessed via a test or interview.

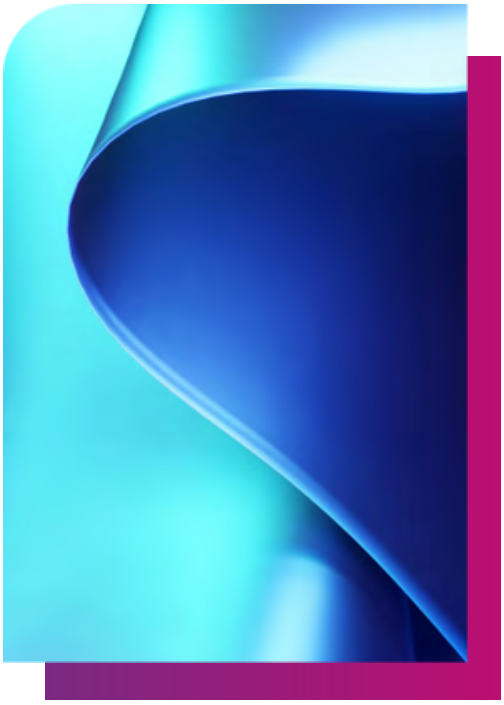
- **Education:** Relevant EQF Level 6 qualification required in a relevant field including but not limited to: computer science, IT, engineering, maths, business, or economics. Without this you will have an interview and assessment to evaluate certifications, qualifications or professional experience.
  *EQF levels explained

- **Residency:** This EU co-funded programme is open to all EU27, EEA, UK and Ukrainian nationals with a passport or valid ID from one of these countries.

AI for Business

## open new doors in an AI-powered landscape

This module is tailored for professionals and students in business, computer science, and related fields who want to expand their expertise in AI and machine learning. It equips you for roles in AI development, data analysis, business intelligence, and innovation management. you'll open doors to a range of industries, including technology, finance, healthcare, and the creative sectors.



## Engaging online learning with expert support and hands-on activities

This fully online module uses a dynamic learning approach, blending live (synchronous) sessions with self-paced (asynchronous) learning. Tutors guide you through lectures, assignments and practical lab work. The module includes innovative teaching methods like problem-based learning and the flipped classroom model.

Emerging technologies, including AI, are integrated to enrich the learning experience. Formative assessments provide continuous feedback to refine your learning approach. The course assessment is split evenly between a practical project (50%) and a proctored final exam (50%).

**Time commitment**

- Classroom and demonstrations: 24 hours
- Practical work/tutorials: 36 hours
- Independent learning: 190 hours
- Total: 250 hours

**Credit points**

- 10 ECTS

# Full course content

**AI for Business** is a 10 ECTS module delivered over 5 hours per week for 12 weeks — 2 hours' live classes and 3 hours of asynchronous study with provided materials. An indicative schedule of topics to be addressed each week is outlined below:

- **Introduction to AI and its history**
  - Overview of AI, significance in today's world, historical development, key milestones
- **Foundational Knowledge for AI**
  - Problemsolving, search algorithms, heuristics, adversarial search, optimisation.
- **Automated Planning**
  - Goal achievement, decision-making, resource allocation, simulation, prediction, learning, adaptation, autonomous systems.
- **Introduction to Machine Learning**
  - Overview of ML, supervised/unsupervised learning, reinforcement learning, introduction to deep learning.
- **Deep Learning**
  - Neural networks, CNNs, RNNs, deep learning applications.
- **Data and Datasets**
  - Importance of data, data types, pre-processing, quality datasets.
- **Reinforcement Learning**
  - Basics of Reinforcement Learning, exploration vs. exploitation, real-world applications.
- **Natural Language Processing (NLP)**
  - NLP fundamentals, text processing, NLP models and techniques.
- **Computer Vision**
  - Basics of computer vision, mage processing, object detection, challenges, and future trends.
- **AI Tools and Platforms**
  - Overview of AI tools/platforms, practical applications, deep learning frameworks.
- **AI and Creativity**
  - AI in creative industries, design, innovation, future prospects, industry speaker session.
- **Ethical and Social Implications in AI**
  - Ethical challenges, societal impacts, AI bias and fairness, privacy, security.

Digital Business
Evolving your digital future

Digital Transformation Project / Practicum

# Elevate your skills with practical, ethical digital innovation strategies

## Develop key skills for leading ethical digital transformation

Gain the tools to design and implement responsible digital innovation strategies.

To participate in this module, learners must have successfully completed the Digital Transformation module and earned at least 30 ECTS. This course centres on creating and managing digital innovation projects, incorporating advanced models for text, image, audio, video and data production. It prioritises ethical practices in digital development and explores the responsibilities associated with synthetic media, preparing learners to handle contemporary digital challenges thoughtfully and effectively.

## Learning objectives

After completing this hands-on project module, learners will be able to:

**Synthesise** knowledge from core areas of the programme to propose, develop, and evaluate a significant digital transformation project for a specific industry or business.

**Apply** project management principles to plan, execute, and deliver a practicum.

**Analyse** the current state, identify opportunities for digital innovation, propose a transformation strategy, and outline the steps for implementation.

**Demonstrate** professional communication skills by presenting and defending their project outcomes.

**Reflect** on the ethical implications and sustainability of their project within a global and societal context.

## Criteria — are you eligible?

- **Language proficiency:** Minimum B2 English proficiency, or 2 years' work or education in an English-speaking environment. IELTS: 6.0; TOEFL PBT: 600; TOEFL CBT: 200; TOEFL iBT: 100. Alternatively, proficiency may be assessed via a test or interview.

- **Education:** Relevant EQF Level 6 qualification required in a relevant field including but not limited to: computer science, IT, engineering, maths, business, or economics. Without this you will have an interview and assessment to evaluate certifications, qualifications or professional experience.
  *EQF levels explained

- **Residency:** This EU co-funded programme is open to all EU27, EEA, UK and Ukrainian nationals with a passport or valid ID from one of these countries.

Digital Transformation Project

## A vital element of the Digital4Business network

This project gives learners hands-on experience and in-depth knowledge of problem-solving abilities, project management skills, and learn to apply emerging technologies.

With guidance from both industry professionals and academic mentors, students benefit from a well-rounded experience that prepares them for leadership roles in the evolving digital landscape.

## Experience cutting-edge learning with digital transformation techniques

This fully online course leverages modern teaching approaches tailored to digital transformation. The learning structure includes live interactive lectures, self-paced independent study, and hands-on lab work. Tutors guide students through advanced problem-solving, gamified learning experiences, and flipped classroom models.

Students will create a digital transformation plan and deliver a comprehensive research report, paired with a software-based artefact. Continuous assessments ensure progress, with the project proposal contributing 30% and the final report and artefact making up 70% of the total grade.

**Time commitment**

- Classroom and demonstrations: 12 hours
- Practical work/tutorials: 12 hours
- Independent learning: 226 hours
- Total: 250 hours

**Credit points**

- 10 ECTS

# Full course content

**The Digital Transformation Project / Practicum** is a 10 ECTS module delivered over 2 hours per week for 12 weeks — 1 hour of live classes and 1 hours of asynchronous study with provided materials, with a significant component of independent study. The schedule of topics to be addressed each week is outlined below:

- **Introduction and Project Proposal Development**
  - Overview of module objectives, expectations, and project proposal guidelines.
- **Research Methodologies**
  - Techniques for conducting a literature review and selecting appropriate research methodologies.
- **Project Management for Digital Projects**
  - Applying principles from "Risk & Change Management in Digital Environments" to plan digital projects.
- **Ethical Considerations and Sustainability in Digital Projects**
  - Insights from "Data Governance and Ethics" on incorporating ethical practices and sustainability.
- **Core Area Integration into Practicum Development**
  - Integration of the core area of specialisation into project development. Namely: Data Science for Business, AI for Business, Cybersecurity for Business, and/or Cloud Computing for Business.
- **Project Development Workshop**
  - Hands-on session to develop and refine projects with peer and instructor feedback.
- **Project Presentation and Communication Skills**
  - Enhancing communication skills for presenting complex projects.
- **Project Evaluation and Reflection**
  - Evaluating projects based on set criteria and reflecting on learning outcomes and future research directions.
- **Project Showcase and Viva**
  - Final presentation of projects to an audience, including a viva voce examination.

Digital 4 Business
Evolving your digital future

# Thank You!

www.digital4business.eu

Co-funded by
the European Union