EMERGING TECHNOLOGIES, ARTIFICIAL INTELLIGENCE AND BUSINESS INNOVATION COURSE

Introduction

The Emerging Technologies, Artificial Intelligence and Business Innovation programme is designed to equip executives, managers, ICT professionals and innovation leaders with the knowledge required to evaluate and apply emerging technologies in ways that improve organisational performance, strengthen decision-making and create new opportunities for growth. Artificial intelligence, generative AI, machine learning, cloud computing, the Internet of Things, blockchain and intelligent automation are changing how organisations analyse information, deliver services, manage operations and engage customers. However, adopting these technologies without a clear business purpose, adequate governance or an understanding of implementation risks can lead to wasted investment, unreliable outcomes and unnecessary exposure to cybersecurity, privacy and ethical challenges. Organisations therefore need leaders who can distinguish technological trends from practical opportunities and make informed decisions about adoption, investment and responsible use. This programme examines the business applications, strategic implications and organisational requirements associated with emerging technologies. Participants explore how AI can support research, customer service, forecasting, document processing, fraud detection, decision support and operational automation. The course also considers generative AI tools, predictive analytics, connected devices, distributed ledger technologies and cloud-based innovation platforms. Beyond understanding individual technologies, participants learn how to identify suitable use cases, assess organisational readiness, prepare business cases, manage implementation risks and establish governance arrangements. Important themes include responsible AI, human oversight, data quality, intellectual property, cybersecurity, privacy, workforce adaptation and the evaluation of technology-enabled benefits.

Course Objectives

- Explain the capabilities, limitations and business implications of major emerging technologies.
- Identify practical applications of AI and other technologies in organisational operations.
- Distinguish between generative AI, predictive analytics, machine learning and intelligent automation.
- Evaluate technology opportunities according to business needs, readiness and strategic value.
- Develop business cases for emerging technology adoption and innovation projects.
- Apply generative AI tools to suitable professional and organisational tasks.
- Identify ethical, legal, privacy, security and operational risks associated with emerging technologies.
- Establish appropriate human oversight and governance for AI-enabled decisions.
- Develop implementation roadmaps, adoption measures and technology performance indicators.
- Prepare a responsible technology innovation proposal aligned with organisational priorities.

Course Modules

> Module 1: Emerging Technologies and the Business Environment

- Overview of emerging and disruptive technologies.
- Technology trends and their implications for organisational strategy.
- Assessing technology maturity, feasibility and business relevance.
- Identifying opportunities and risks associated with technological change.

> Module 2: Artificial Intelligence and Machine Learning

- Fundamentals of AI, machine learning and intelligent systems.
- Supervised, unsupervised and other common machine learning approaches.
- Applications in forecasting, classification, optimisation and decision support.
- AI limitations, model performance and the importance of data quality.

> Module 3: Generative AI and Workplace Applications

- Principles and practical applications of generative AI.
- Prompt design and AI-assisted research, drafting and summarization.
- Applying AI to reporting, knowledge management and professional productivity.
- Verification of AI-generated outputs, confidentiality and human oversight.

> Module 4: Intelligent Automation and Process Innovation
- Identifying repetitive and rules-based processes suitable for automation.
- Robotic process automation and AI-enabled workflows.
- Integrating AI tools with existing business applications.
- Measuring productivity improvements, error reduction and service quality.

> Module 5: Data Analytics and Predictive Decision-Making
- Using organisational data to identify patterns and opportunities.
- Predictive analytics for planning, forecasting and resource allocation.
- Decision dashboards and data visualisation for management.
- Data governance, data quality and responsible analytical practices.

> Module 6: Cloud Computing, IoT and Connected Technologies
- Cloud platforms as enablers of innovation and scalable digital services.
- Internet of Things applications in operations, infrastructure and service delivery.
- Connected systems, real-time data and intelligent monitoring.
- Infrastructure requirements, interoperability, security and implementation costs.

> Module 7: Blockchain and Other Emerging Technology Applications
- Distributed ledger technology and blockchain fundamentals.
- Smart contracts and potential applications in transactions and recordkeeping.
- Exploring extended reality, digital twins and other emerging capabilities.
- Evaluating technology suitability, adoption barriers and business value.

> Module 8: Responsible AI, Ethics and Technology Governance
- Ethical principles for AI and automated decision-making.
- Privacy, confidentiality, intellectual property and data protection.
- Bias, explainability, accountability and human oversight.
- Cybersecurity, regulatory considerations and organisational AI policies.

> Module 9: Technology Investment and Innovation Implementation
- Identifying and prioritizing emerging technology use cases.
- Conducting feasibility studies and preparing investment business cases.
- Evaluating costs, benefits, risks and implementation dependencies.
- Managing pilots, staff adoption, scalability and benefits realization.

> Module 10: Emerging Technology Innovation Capstone
- Selecting an organisational problem suitable for a technology-based solution.

- Designing a use case and defining expected operational or commercial benefits.
- Preparing an implementation roadmap, risk assessment and governance plan.
- Presenting a technology innovation proposal with measurable success indicators.