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DIGITAL INNOVATION AND TRANSFORMATION | DIT-003

Fundamentals of Artificial Intelligence (AI)

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Course content

Why Attend

Course Introduction

Artificial Intelligence (AI) is revolutionizing industries, economies, and everyday life. As AI systems grow more capable, understanding the fundamentals of AI is essential for individuals and businesses to stay ahead in a rapidly evolving landscape.

This course takes a comprehensive approach, starting with the foundational theories of AI and leading into practical applications, case studies, and hands-on projects.

By the end of the course, participants will be equipped to understand how AI works and how to implement it in various real-world scenarios.

The Fundamentals of Artificial Intelligence (AI) training course will cover the history and evolution of AI, introduce key AI techniques such as machine learning, deep learning, and natural language processing, and provide insights into AI's societal and ethical implications.

Participants will also gain hands-on experience with AI development tools, building foundational skills to apply AI in professional and personal contexts.

Course Methodology

This training course will utilise a variety of proven adult learning techniques to ensure maximum understanding, comprehension and retention of the information presented. This includes an interactive mixture of lecture-led learning & group discussions.

Who should Attend?

This training course is suitable to a wide range of professionals but will greatly benefit:

• IT professionals, software developers, and engineers looking to build their AI skills

• Business leaders and managers seeking to understand the potential of AI in driving innovation and efficiency

• Data scientists, analysts, and statisticians who wish to deepen their knowledge in AI and machine learning

• Students, graduates, or professionals considering a career in AI or data science

Course content

Course Methodology

• Anyone with an interest in AI and its practical applications, regardless of prior technical knowledge

Course Objectives

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

• Understand the core principles and theories behind Artificial Intelligence

• Recognize the key techniques in AI, such as machine learning, deep learning, and neural networks

• Apply machine learning techniques to solve practical business and research problems

• Explore AI tools and platforms used to develop AI applications

• Understand the societal impact, ethical considerations, and challenges of AI

• Gain a solid foundation to pursue further study or careers in AI and data science

Course outline

Day One: Introduction to Artificial Intelligence and Its Applications

• Definition and Types of AI: Narrow AI (task-specific), General AI (human-like), and the theoretical concept of Superintelligent AI.

• Historical Evolution of AI: From early symbolic AI to the modern advancements in machine learning and deep learning

• AI in Practice: How AI is transforming industries, from healthcare and finance to transportation and retail

• Core AI Techniques: Machine learning, neural networks, natural language processing (NLP), and AI for robotics and automation

• AI in the Real World: Case studies of successful AI applications, including challenges encountered and lessons learned

Day Two: Machine Learning Fundamentals

Course content

Course outline

• Overview of Machine Learning: Explanation of supervised, unsupervised, and reinforcement learning

• Key Machine Learning Algorithms: Linear regression, decision trees, random forests, support vector machines, and clustering

• Data's Role in AI: The importance of data in AI and machine learning, covering data collection, preprocessing, and feature engineering

• Feature Engineering: Techniques to create relevant features for machine learning models, helping improve model accuracy

• Hands-on Machine Learning: Participants will apply machine learning algorithms using real-world datasets, building simple models for classification, regression, and clustering

Day Three: Neural Networks and Deep Learning

• Neural Networks: Understanding the architecture of neural networks, from input layers to output layers, and how information is passed through hidden layers

• Training Neural Networks: Explanation of backpropagation and how neural networks "learn" by adjusting weights based on errors

• Deep Learning: Introduction to deep learning and why it is considered one of the most transformative AI technologies

• Convolutional Neural Networks (CNNs): How CNNs are designed to process visual data, like images and videos, and their applications in computer vision

• Practical Deep Learning: Participants will use deep learning libraries like TensorFlow or Keras to build a simple neural network or CNN for image classification

Day Four: Natural Language Processing (NLP) and AI Tools

• Introduction to NLP: How AI systems analyze and understand text and speech data

• Applications of NLP: Sentiment analysis, machine translation, chatbots, and speech recognition

Course content

Course outline

• NLP Techniques: Tokenization, named entity recognition, and part-of-speech tagging, as well as advanced models like Word2Vec and Transformer models (BERT, GPT)

• AI Development Tools: Overview of popular AI development frameworks, such as TensorFlow, PyTorch, and Scikit-learn

• AI as a Service: How companies are using cloud-based AI services (Google AI, Microsoft Azure AI, IBM Watson) to accelerate AI projects

• Practical NLP and Tool Application: Participants will build an NLP-based chatbot or use AI tools to solve a real-world problem (e.g., analyzing social media sentiment)

Day Five: AI Ethics, Challenges, and Future Trends

• Ethical Implications of AI: Bias in AI algorithms, privacy issues, and the potential for AI to reinforce societal inequalities

• AI and the Future of Work: Exploring the impact of AI on job automation, future job markets, and the skills required in an AI-driven economy

• AI Governance: Regulatory challenges in AI and the role of governments in establishing policies and standards for AI development

• The Future of AI: An exploration of emerging AI trends, such as AI in quantum computing, AI for healthcare innovation, and AI-driven automation

• Challenges of Scaling AI: Issues with data, computing power, interpretability, and ensuring that AI systems remain safe, fair, and transparent

• Final Project Review and Course Wrap-Up: Participants will revisit the projects they worked on during the course, discuss key takeaways, and explore how to continue learning AI

Seminar dates

Available seminar dates

Live dates and pricing for Fundamentals of Artificial Intelligence (AI) generated from the course details page.

Date	Location	Format	Fee
7 - 11 September 2026	Munich - Germany	Classroom	**€2,760.-**
12 - 16 October 2026	Amsterdam - Netherlands	Classroom	**€3,400.-**
9 - 13 November 2026	London - U.K	Classroom	**€3,360.-**
14 - 18 December 2026	Istanbul - Turkey	Classroom	**€2,280.-**
18 - 22 January 2027	Barcelona - Spain	Classroom	**€3,080.-**
15 - 19 February 2027	London - U.K	Classroom	**€3,360.-**
15 - 19 March 2027	Rome - Italy	Classroom	**€3,400.-**
19 - 23 April 2027	Munich - Germany	Classroom	**€3,400.-**
17 - 21 May 2027	Amsterdam - Netherlands	Classroom	**€3,400.-**
21 - 25 June 2027	London - U.K	Classroom	**€3,360.-**
19 - 23 July 2027	Istanbul - Turkey	Classroom	**€2,280.-**
16 - 20 August 2027	Barcelona - Spain	Classroom	**€3,080.-**
20 - 24 September 2027	London - U.K	Classroom	**€3,360.-**
18 - 22 October 2027	Rome - Italy	Classroom	**€3,400.-**
15 - 19 November 2027	Munich - Germany	Classroom	**€3,400.-**
20 - 24 December 2027	Amsterdam - Netherlands	Classroom	**€3,400.-**