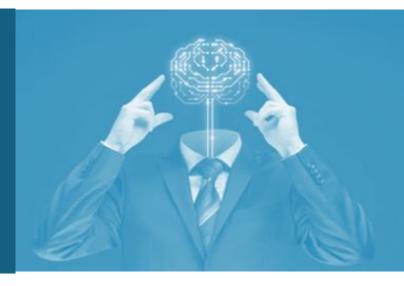# PRINCIPLES AND PRACTICES OF ARTIFICIAL INTELLIGENCE

COURSE OVERVIEW

This comprehensive 5-day training course introduces participants to the fundamental principles and real-world applications of Artificial Intelligence (AI). The course provides a practical and conceptual overview of key AI technologies including machine learning, natural language processing, computer vision, and intelligent agents. Participants will explore how AI is transforming industries, and gain hands-on experience with tools and frameworks used to develop AI systems.

Designed for professionals with technical or analytical backgrounds, this course bridges theory and practice, equipping attendees with the skills to understand, design, evaluate, and implement AI solutions responsibly and effectively in their organizations.

DATES, VENUES AND FEES

07 – 11 December 2025 - Dubai

(5 Days)

Fees   US$ 4500

Note: Fee is per participant + 5% VAT (if applicable).
Groups from the same company can enjoy a **discounted** price.

WHO SHOULD ATTEND?

This course is appropriate for a wide range of professionals but not limited to:

- Engineers and developers interested in AI/ML applications
- IT professionals and systems architects involved in AI integration
- Data analysts and business intelligence professionals

- Technical project managers and product owners
- Consultants, researchers, and domain experts exploring AI adoption
- Anyone seeking a solid foundation in artificial intelligence technologies and methods

Note: Basic knowledge of programming and data analysis (e.g., Python, statistics) is recommended.

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ACCREDITATION

This training course is certified by CPD.

The CPD Certification Service is the leading independent CPD accreditation institution operating across industry sectors to complement the Continuing Professional Development policies of professional institutes and academic bodies. The CPD Certification Service provides support, advice, and recognised independent CPD accreditation compatible with global CPD principles. CPD is the term used to describe the learning activities professionals engage in to develop and enhance their abilities and keep skills and knowledge up to date. CPD Units are only awarded to programmes after each programme is scrutinised to ensure integrity and quality according to CPD standards and benchmarks.

COURSE CERTIFICATE

MSTC certificate will be issued to all attendees completing a minimum of 80% of the total tuition hours of the course.

CPD internationally recognized certificate will be issued for all participants who will meet the course requirements.
CPD certificates will be issued within a month of the successful completion of the course.

TRAINING METHODOLOGY

- Expert-led sessions with dynamic visual aids
- Comprehensive course manual to support practical application and reinforcement
- Interactive discussions addressing participants' real-world projects and challenges
- Insightful case studies and proven best practices to enhance learning

LEARNING OBJECTIVES

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

- Understand the core concepts, terminology, and history of artificial intelligence
- Identify and evaluate key AI technologies and their business applications
- Apply machine learning techniques using real-world datasets
- Explore natural language processing, computer vision, and intelligent agents
- Analyze the ethical, social, and legal implications of AI deployment
- Design basic AI models and assess their performance and scalability
- Understand AI system lifecycle, deployment, and governance best practices

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COURSE OUTLINE

DAY 1

Introduction to Artificial Intelligence
- Pre test
- History and evolution of AI
- AI vs. Machine Learning vs. Deep Learning
- Types of AI: Narrow vs. General AI
- Rule-based systems and knowledge representation
- AI applications across industries
- Workshop

DAY 2

Machine Learning Principles and Techniques
- Supervised vs. unsupervised learning
- Algorithms: regression, classification, clustering
- Model training, testing, and validation
- Overfitting, underfitting, and model performance metrics
- Introduction to Python and Scikit-learn
- Lab Session

DAY 3

Deep Learning and Neural Networks
- Neural network basics: perceptrons, activation functions
- Deep learning architectures: CNNs, RNNs, LSTMs
- Introduction to TensorFlow and PyTorch
- Use cases in image recognition and speech processing
- Transfer learning and fine-tuning pre-trained models
- Lab Session

DAY 4

Natural Language Processing and Computer Vision
- Overview of NLP: tokenization, stemming, sentiment analysis
- Large Language Models (LLMs), GPTs, and transformers
- Image recognition and object detection techniques
- Real-world applications: chatbots, OCR, facial recognition
- Ethical concerns: bias, data privacy, misinformation
- Lab Session

DAY 5

AI in Practice, Governance, and Future Trends
- AI lifecycle: data collection, model development, deployment, monitoring
- Introduction to MLOps and cloud-based AI services
- Explainable AI (XAI) and interpretability tools (e.g., SHAP, LIME)
- AI ethics, fairness, bias mitigation strategies
- Governance, compliance, and regulatory frameworks (e.g., EU AI Act)
- Group Project: Design and present an AI solution for a real-world business scenario
- Course wrap-up, Q&A, feedback, and next steps for learning AI
- Post test

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