



**Scandinavian Academy**  
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# Course: Principles and Practices of Artificial Intelligence

| Code    | City              | Hotel              | Start      | End        | Price  | Language - Hours |
|---------|-------------------|--------------------|------------|------------|--------|------------------|
| DAI-851 | Hamburg (Germany) | Hotel Meeting Room | 2026-10-05 | 2026-10-09 | 5950 € | En - 25          |

## Course Introduction

Organizations generate vast amounts of data, and with artificial intelligence (AI), we can harness this data to maximize benefits and reduce costs. By utilizing modern technology, structured and unstructured data can be analyzed through AI to unlock new possibilities for improved decision-making, corporate performance, and human capabilities.

This evolving field is rich with new terminology, techniques, functions, and business processes. This course equips participants with the necessary AI knowledge to become AI leaders within their organizations, understand its concepts, encourage qualified data professionals to develop AI strategies, and learn how to plan, execute, and evaluate AI projects effectively.

## General Course Objective

To provide participants with fundamental AI knowledge and skills, enabling them to apply various AI techniques in the workplace, improve decision-making processes, and develop AI strategies and project management capabilities for enhanced organizational efficiency.



## Course Objectives

- Explain the concept of AI and its different forms.
- Apply AI technologies across the value chain.
- Explore the algorithms and techniques that power AI.
- Implement best practices for AI projects and related activities.
- Assess available and required skills and competencies for AI implementation.

## Target Audience

- Executives and business leaders interested in digital transformation.
- Department heads and innovation and technology managers.
- Data analysts and information management specialists.
- Business development and strategic planning professionals.
- IT and AI professionals.
- Consultants and specialists in digital transformation and AI.
- Entrepreneurs and startup owners interested in AI applications.

## Course Outline

### Introduction to AI, Machine Learning (ML), and Data Science

- The concept and forms of AI.
- AI as a combination of modern technologies.
- A historical perspective on AI.
- AI fundamentals: logic, reasoning, and action.
- AI thinking: the role of machine learning.

### The Nine Building Blocks of AI

- Algorithms and search engines.
- Supervised learning applications:



- Classification: Naïve Bayes algorithms.
- Regression: Linear regression and decision trees.
- Semi-supervised learning applications:
  - Algorithms such as Q-Learning and SARSA.
- Unsupervised learning applications:
  - Clustering: k-Means and hierarchical clustering.

### **Defining AI Methodology: Team Collaboration**

- Practical exercises with AI building blocks and real-world cases.
- AI opportunity matrix.

### **Successful AI Use Cases Based on Porter's Value Chain**

- Core activities: Inbound operations, marketing, sales, and outbound services.
- Support activities: Management, finance, HR, R&D, and procurement.

### **Successful AI Applications by Technology**

- Natural Language Processing (NLP).
- Image recognition.
- Machine learning.

### **Managing Successful AI Projects**

- **Project process:**
  - Idea generation and problem definition.
  - Exploratory data analysis.
  - Model development.
  - Implementation.
- **Skills and capabilities:**
  - Organizational changes and AI adoption.
  - The ten most common AI implementation mistakes.



## **AI Tools and Roadmap Development**

- Technologies: R, Python, Spotfire, Hadoop.
- Platforms: Microsoft Azure, IBM Watson, Google TensorFlow.
- Roadmap planning:
  - Developing the first AI roadmap.



The Scandinavian Academy for Training and Development adopts the latest scientific and professional methodologies in training and human resource development, aiming to enhance the efficiency of individuals and organizations. Training programs are delivered through a comprehensive approach that includes:

- Theoretical lectures supported by PowerPoint presentations and visual materials (videos and short films).
- Scientific evaluation of participants before and after the program to measure progress and knowledge acquisition.
- Brainstorming sessions and practical role-playing to simulate real-life scenarios.
- Case studies tailored to align with the training content and participants work nature.
- Assessment tests conducted at the end of the program to evaluate the achievement of training objectives.

Each participant receives the training material (both theoretical and practical) in printed form and saved on a CD or flash drive. Detailed reports, including attendance records, final results, and overall program evaluations, are also provided.

Training materials are prepared professionally by a team of experts and specialists in various fields. At the end of the program, participants are awarded a professional attendance certificate, signed and accredited by the Scandinavian Academy for Training and Development.

### **Program Timings:**

- 9:00 AM to 2:00 PM in Arab cities.
- 10:00 AM to 3:00 PM in European and Asian cities.

### **The program includes:**

- A daily Coffee Break provided during the sessions to ensure participants comfort.