# Course Title: Introduction to AI and Machine Learning

**Course Synopsis:**

This course introduces learners to Artificial Intelligence (AI), Machine Learning (ML), and Deep Learning (DL) fundamentals and how AI and ML may help to address various business needs. The types and techniques of ML and the ML modeling process will also be covered. Use cases and activities will be introduced to enhance thinking capabilities, and practical sessions will be conducted for learners to implement ML solutions.

**Learning Objectives:**

At the end of the course, learners will be able to:
1. Understand the basics of AI, ML, DL
2. Know the ML types and techniques and understand how they work
3. Appreciate the applications of AI/ML in addressing various business needs

**Topics Include:**

- Overview of AI, ML, and DL
- Types of ML
- ML techniques
- Business problem formulation and the ML modeling process
- ML use case and practical session

**Machine Learning Platform/Software:**

- Can be tailored to use Microsoft Azure, Google Teacheable Machine and/or
- Microsoft Excel

**Pre-requisite:**

- Basic IT skills and knowledge are required, such as Internet surfing, Microsoft Excel, and registering with Microsoft Azure using an email account. No programming background is needed.

**Course Duration:** 7 hours

## Course Programme:

| Time | Programme |
|---|---|
| 0900 - 1030 | **1. Overview of AI and machine learning**<br>    1.1. What is Artificial Intelligence (AI)<br>    1.2. What is Machine Learning (ML)<br>    1.3. What is Deep Learning (DL) |
| 1030 – 1045 | **Tea/Coffee Break** |
| 1045 – 1230 | **4Activity 1**: Creating an Object Recognition Model<br><br>**2. Machine Learning Types and Techniques**<br>    2.1. Supervised, Unsupervised, and Reinforcement Learning<br>    2.2. Classification<br>    2.3. Regression |
| 1230 – 1330 | **Lunch** |
| 1330 – 1500 | 2.4 Clustering<br><br>2.5 Artificial Neural Networks<br><br>**Activity 2**: Linear Regression using Excel |
| 1500 – 1515 | **Tea/Coffee Break** |
| 1515 – 1630 | **3. Machine learning modeling process**<br>    3.1. The Machine Learning Pipeline<br>    3.2. Use Case and Applications<br><br>**Activity 3**: Business Problem and Formulation in ML |
| 1630 – 1700 | Conclusion and Q&A session |