

## **Course Title: Introduction to Artificial Intelligence (40 hours)**

### Week 1: Introduction to AI and Machine Learning (10 hours)

- What is Artificial Intelligence?
- Applications of AI
- Types of AI
- Machine Learning: Supervised, Unsupervised and Reinforcement Learning
- Introduction to Python for AI
- Hands-on: Setting up Python environment and basic Python programming

### Week 2: Supervised Learning (10 hours)

- Linear Regression
- Logistic Regression
- Decision Trees
- Random Forests
- Neural Networks
- Hands-on: Implementing supervised learning algorithms in Python

### Week 3: Unsupervised Learning and Reinforcement Learning (10 hours)

- Clustering
- Principal Component Analysis (PCA)
- K-Nearest Neighbors (KNN)
- Q-Learning
- Hands-on: Implementing unsupervised and reinforcement learning algorithms in Python

### Week 4: Deep Learning (10 hours)

- Introduction to Deep Learning
- Convolutional Neural Networks (CNN)
- Recurrent Neural Networks (RNN)
- Transfer Learning
- Hands-on: Implementing deep learning algorithms in Python

Assessment:

Quizzes at the end of each week

Final project: Develop an AI application using the concepts learned in the course.

Note: This syllabus is only a suggestion and can be adjusted based on the level of the students and their prior knowledge of programming and AI.