Course Name: Artificial Intelligence

Credit Hours: 2-1

Contact Hours:

2-3 Pre-

requisites: None

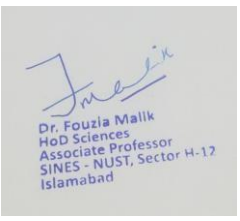
Course Introduction:

This course is designed to provide students with a comprehensive understanding of the foundations of AI, as well as practical experience in applying AI techniques and methods to real-world problems. Emphasis is placed on hands-on programming and project work, as well as critical thinking and problem-solving skills. By the end of the course, students will have the skills and knowledge needed to pursue further studies and careers in the field of Artificial Intelligence.

CLO No	Course Learning Outcomes	Bloom Taxonomy
CLO-1	Understand the fundamental concepts and techniques of Artificial Intelligence including key concepts and algorithms in machine learning	C1 (Knowledge)
CLO-2	Implement and evaluate machine learning models	C3 (Apply)
CLO-3	Implement and train deep learning models for various applications	C3 (Apply)
CLO-4	Apply data pre-processing, feature extraction, and model evaluation to real-world problems	C3 (Apply)
CLO-5	Develop critical thinking, problem-solving, and communication skills through projects	C6 (Create)

Course Outline:

#	Weekly Distribution of Course Contents
Week-1	Introduction to Artificial Intelligence, Applications of AI in various domains
Week-2	Ethics and social implications of AI



Week-3	AI techniques and methods
Week-4	Overview of programming languages and platforms for AI
Week-5	Basic mathematical concepts for AI
Week-6	Introduction to Machine Learning (Supervised learning, Unsupervised learning)
Week-7	Introduction to Machine Learning (Reinforcement learning, Deep learning)
Week-8	AI Programming Tools and Libraries
Week-9	Python programming for AI
Week-10	Data preparation and pre-processing
Week-11	Model selection and evaluation
Week-12	Analysis and interpretation of results
Week-13	Applications of AI (Natural language processing and text analysis)
Week-14	Applications of AI (Computer vision and image analysis, Robotics

	and control systems)
Week-15	Emerging Trends and Future Directions in AI (healthcare and biomedicine, autonomous systems)
Week-16	Emerging Trends and Future Directions in AI (self-driving cars, financial and economic analysis, etc)

Reference Materials:

11. Artificial Intelligence with Python, by Prateek Joshi (2017)
12. Machine Learning: A Probabilistic Perspective, Kevin P. Murphy, MIT Press, (2012).