AI and its Application – 30-Day Syllabus

Objective:

To equip students with practical and conceptual knowledge in Python, data analysis, and AI/ML through coding, projects, and tool exploration.

Orientation & Python Programming

- Course Orientation + Syllabus Walkthrough
- Introduction to Python
- Data Structures in Python
- Modular Programming in Python
- File Handling and Exceptions
- NumPy Basics
- Pandas and Matplotlib
- MCQ Exam

Data Analysis & Statistics

- Basic Statistics (mean, median, mode)
- Linear Algebra
- Probability Basics
- Exploratory Data Analysis 1 (EDA1)
- Exploratory Data Analysis 2 (EDA2)
- Exploratory Data Analysis 3 (EDA3)
- MCQ Exam and EDA Project

Machine Learning Concepts & Projects

- Introduction to Machine Learning
- Supervised Learning- Classification
- Supervised Learning- Regression
- Model Evaluation and Visualization- Understanding Performance
- The Complete ML Process
- Gentle Introduction to Deep Learning and No-Code Machine Learning Platforms
- Capstone Project- Simple ML Model Development (Group Work)

AI Concepts & Tools

- Introduction to Artificial Intelligence
- Applications of AI (health, finance, art, etc.)
- Natural Language Processing Tools (ChatGPT, Gemini, Claude)
- Image AI Tools (Canva Magic, DALL·E, Runway ML)
- Audio/Video AI Tools (Pictory, Descript, ElevenLabs)
- Automation Tools (Zapier, Notion AI, GitHub Copilot)
- Tool Demo Day / Present Your Favorite Tool
- AI Career Paths + Interview Readiness + Reflection Session