Artificial Intelligence & Data Science – Syllabus

✓ Module 1: Introduction to Analytics

Analytics Overview

Introduction to Python programming

Summary statistics using Python

✓ Module 2: Data Science with Python

Introduction and Data Manipulation with Python

Overview of inferential statistics

Data pre-processing (Data Exploration & Data Preparation)

Data Visualization with Python

✓ Module 3: Data Understanding and Preparation

Introduction to databases

Relational Databases

Basic SQL

Advanced SQL

Reporting and Datawarehousing

Business Intelligence

✓ Module 4: Data Visualization and Storytelling

Value of Data and Power of Storytelling

Data Viz and Business Problem Formulation

Visualizing Time, Proportion and Space

Exploratory Data Analysis and Relationship Visualization

Communicating with Data

Python and Data Visualization

✓ Module 5: Predictive Modelling with Python

Feature engineering

Predictive Modelling with Python using regression techniques

Linear and logistic regression

✓ Module 6: Advanced Analytics and Machine Learning

Overview of Predictive Modeling and Machine Learning

Cluster Analysis

PCA & SVM

Decision Trees and Resampling Techniques

Ensemble Models, Boosting and Random Forest

Introduction to Time Series forecasting

✓ Module 7: Big Data Engineering

Intro to Big Data

Hadoop, HDFS & MapReduce

Data warehousing with HIVE

Spark, RDD's, data frames & Spark SQL

Machine learning on Spark (Spark MLlib)

Web scraping

Big Data Case study

✓ Module 8: DL, AI and Tensor Flow

Artificial Neural Networks (ANN) and Artificial Intelligence

Multi-layered Neural Networks and Deep Learning

Natural Language Processing

Search and Recommendation

Computer Vision

Explainable AI (XAI)

✓ Module 9 & 10: Capstone Project and Career Management

Capstone Project

Career Management Activities