Data Science with Generative AI

TRAINING & PLACEMENT PROGRAM

Syllabus

Module 1 : MS Excel

- Installation and Introduction to Excel
- Understanding the Structure of the Workbook & Worksheet Excel Calculation
- Excel File Handling
- Excel Formulas and Functions
- Excel Advance - VLOOKUP, Pivot Chart, Basic Macros, and More Data Analysis
- Hands-on Sessions and Assignments for Practice
- Excel – Non-Graded Exam

Module 2: MySQL Database

- Installation and Introduction to MySQL
- MySQL Databases
- Table and Views
- Statements and Fundamentals
- Data Types in MySQL
- Aggregate Functions
- SQL Constraints
- SQL Joins
- Union and Union All
- Clauses in MySQL
- Control Flow Function
- Conditions in MySQL
- Hands-on Sessions and Assignments for Practice
- MySQL – Graded Exam

Module 3 : Power BI for Data Visualization

- Basics of Power BI
- Types of Graphs and When to create them
- Working with Filters
- Calculated Columns, Calculated Measures & Calculated Tables
- Formatting and Styling of Graphs and Dashboards
- Writing basic and Advanced DAX Queries
- Data Visualization using Power BI
- Hands-on Sessions and Assignments for Practice
- Power BI – Graded Exam

Module 4 : Looker Studio for Data Visualization

- Basics of Google Looker Studio
- Getting Started
- Connecting Google Sheets, CSV, Excel files
- Connecting Google Analytics, Google Search Console Files
- Digital Marketing Data Analytics with Looker Studio
- Creating Graphs, Dashboards, Pages, and Reports with Looker Studio

Module 5 : Tableau for Data Visualization

- Basics of Tableau and its different versions
- Software Installation and Online Authoring
- Connecting CSV, Excel, JSON, MySQL, Postgresql, MSSQL etc. with Tableau
- Digital Marketing Data Analytics with Tableau
- Creating Graphs, Dashboards, Stories, and Reports with Tableau
- Calculated Fields, Parameters, Groups in Tableau
- Filters at different Level in Tableau
- Relationships and Joins in Tableau
- Clustering, Trend Analysis and Forecasting Data With Tableau
- Exercise on different projects in Tableau

Module 6 : Core Python Programming

- Introduction and Software Installation
- Basic of Python
- Data Types and Operations with different types of data
- Control Statement and Looping
- Data Structures
- Functions in Python
- Libraries
- File Handling
- Exception Handling
- Hands-on Sessions and Assignments for Practice
- Python – Graded Exam

Module 7 : Python Libraries for Data Analysis

- Working with JSON Data and JSON APIs
- Learn Python Pandas in detail
    - Series and Dataframe Basics
    - Connecting with Excel, Csv, Json, SQL and HTML datasets
    - Data Cleaning, Missing Data Handling
    - Exporting to Excel and CSV files
    - Reshaping : Crosstab, Melt, Pivot, Join, Merge, Groupby etc.
    - Plotting Bar, Pie, Line, Scatter, Box, Histogram etc. graphs with Pandas
    - Working with TimeSeries Data & its analysis
- Learn Seaborn & Matplotlib for Advanced Data Visualization

Module 8 : Python Libraries for Machine Learning

- Supervised and Unsupervised Machine Learning concepts
- Applying Linear Regression, Logistic Regression algorithms on datasets
- Applying Decision Tree, Support Vector Machine, Random Forest etc. Classification algorithms on datasets
- Working with Clustering and other Unsupervised Algorithms
- Creating Machine Learning Models

Module 9 : Computer Vision

- Introduction and Implementation

Module 10 : NLP with AI

- Lexical Processing
- Syntactic Processing
- Semantic Processing
- Introduction to Neural Networks
- Hands-on Sessions and Assignments for Practice
- NLP – Graded Exam

Module 11 : Deep Learning with AI

- Introduction to Deep Learning
- Introduction to Neural Networks
- Convolutional Neural Networks
- Regional CNN
- Generative Adversarial Network (GAN)
- Boltzmann Machine & Autoencoder
- Introduction RNN and GRU
- Emotion and Gender Detection
- Auto Image Captioning Using CNN LSTM
- Hands-on Sessions and Assignments for Practice
- Deep Learning – Non-Graded Exam

Module 12: Resume Building and Personality Development

Highlights : Working on 20 Public Projects and 3 Major Projects