career connect

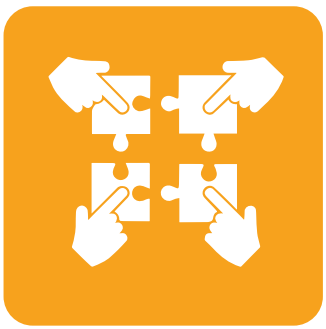
Data Analytics

Program

Learning Model

Tutor-led physical and virtual classes

Group based projects



Collaborative & interactive learning

Syllabus

Week 1: Introduction to Data Analytics

01. 01. Understanding Data Analytics

- What is Data Analytics?
- Importance of Data Analytics in Business
- Types of Data Analytics (Descriptive, Diagnostic, Predictive, Prescriptive)
- Data Analytics Lifecycle
- Roles and Responsibilities of a Data Analyst
- Industry Applications of Data Analytics

01.02. Introduction to Data & Databases

- What is Data? Types of Data (Structured, Semi-Structured, Unstructured)
- Data Sources (Web, APIs, Files, Databases)
- Introduction to Databases
- Overview of SQL and NoSQL Databases

01.03. Tools & Environment Setup

- Installing Python (Anaconda, Jupyter Notebook, VS Code)
- Introduction to Excel/Google Sheets
- Overview of BI Tools (Power BI, Tableau, Looker Studio)
- Setting up Git & GitHub for version control

Week 2: Data Collection & Cleaning

02.01. Data Collection Techniques

- Manual Data Entry
- Importing Data from CSV, Excel, APIs
- Web Scraping Basics
- Data Sources: Kaggle, Google Dataset Search

02.02. Data Cleaning with Excel & Python

- Handling Missing Data
- Removing Duplicates & Outliers
- Data Type Conversion
- Data Validation & Formatting
- Using pandas for Cleaning

02.03. Exploratory Data Analysis (EDA)

- Overview of EDA
- Summarizing Data using Descriptive Statistics
- Using Python libraries: pandas, numpy
- Visual Exploration with matplotlib and seaborn

Week 3: Data Analysis with Excel

03.01. Excel for Data Analysis

- Functions: SUMIFS, COUNTIFS, VLOOKUP, INDEX-MATCH
- Data Sorting, Filtering & Conditional Formatting
- Pivot Tables & Pivot Charts
- Data Visualization in Excel

03.02. Excel Dashboards

- Creating Interactive Dashboards
- Using Slicers & Timelines
- Linking Multiple Tables with Power Query

03.03. Excel Project

- Real-world business dataset
- Analyze, visualize, and present insights

Week 4: SQL for Data Analysis

04.01. SQL Basicss

- Introduction to Databases
- SQL Syntax and Structure
- SELECT, WHERE, ORDER BY, LIMIT

04.02. Intermediate SQL

- Aggregation Functions (SUM, AVG, COUNT)
- GROUP BY and HAVING
- JOINS (INNER, LEFT, RIGHT, FULL)
- Subqueries

04.03. Advanced SQL

- Window Functions
- Common Table Expressions (CTEs)
- Data Manipulation (INSERT, UPDATE, DELETE)
- SQL Optimization Tips

Week 5: Python for Data Analytics

05.01. Python Basics

- Data Types, Variables, Loops, and Conditionals
- Working with Lists, Tuples, and Dictionaries
- Importing and Using Libraries

05.02. Data Manipulation with Pandas

- Series and DataFrames
- Selecting, Filtering, Sorting
- Merging & Joining DataFrames
- GroupBy & Aggregation

05.03. Data Visualization

- Plotting with Matplotlib
- Visualizing Trends with Seaborn
- Customizing Charts & Layouts
- Dashboard-like visualizations in Python

Week 6: Data Visualization with Power BI

06.01. Introduction to Power BI

- Understanding BI Concepts
- Power BI Interface Overview
- Data Import & Transformation

06.02. Building Reports & Dashboards

- Creating Charts & Tables
- Using Filters, Slicers & KPIs
- Relationships and Data Models

06.03. Publishing & Sharing Reports

- Power BI Service Overview
- Collaboration & Sharing Insights
- Power BI Best Practices

Week 7: Statistics & Business Insights

07.01. Introduction to Statistics

- Mean, Median, Mode, Variance, Standard Deviation
- Probability Concepts
- Correlation & Covariance

07.02. Inferential Statistics

- Hypothesis Testing
- Confidence Intervals
- Regression Analysis

07.03. Turning Data into Insights

- Framing Analytical Questions
- Deriving Business Recommendations
- Presenting Findings to Stakeholders

Week 8: Advanced Analytics & Automation

08.01. Introduction to Predictive Analytics

- What is Predictive Analytics?
- Regression, Classification, and Clustering Concepts
- Introduction to Machine Learning with Scikit-Learn

08.02. Data Automation

- Automating Reports with Python
- Scheduling Reports in Power BI
- Data Pipelines Overview

08.03. Capstone Project: End-to-End Analysis

- Choose a dataset
- Clean, analyze, visualize, and present
- Document and present results

Week 9: Portfolio Building & Career Prep

09.01. Building a Data Analytics Portfolio

- Project Documentation on Notion or GitHub
- Creating Case Studies
- Writing a Data Story

09.02. Resume & LinkedIn Optimization

- Tailoring a Data Analyst Resume
- Portfolio Presentation on LinkedIn
- Sharing Insights Online

09.03. Mock Interviews & Career Growth

- Data Analyst Interview Questions
- Problem Solving Sessions
- Freelance & Remote Job Platforms