Learning Curriculum -
Developing Hard Skills

Module	Topics	Case Studies
Introduction to Data Analytics and Excel	• Introduction to Data Analytics and it's types • Data Cleaning and tools of Data Analysis • Operations, Functions and Formatting in MS Excel • Data Extraction and it's understanding • LOOKUPs in Excel • Al tools in MS excel • Data Cleaning in Excel - Handling Missing • Values and Outliers • Charts in Data Analytics • Methods of Data Analysis - Univariate and Bivariate • Power Query • Data Transformation in Power Query	National Air Quality US Healthcare Dataset India CPI Inflation
Data Visualization with PowerBi	• Introduction to Power Bl and Business Intelligence • Basic functionality of PowerBl and Data Transformations • Data Cleaning with Power Bl • Al Tools in Power Bl • Advanced Power Query and Data Modelling • DAX Functions • Advanced DAX Functions • Hierarchy and visualization in Power Bl • Creating Compelling Reports in Power Bl • Data Analysis and Data Storytelling using Power Bl • Features in Power Bl Service with Al Insights • Row Level Security and KPIs	IT Department PowerBi Dashboard E-com Orders

Module	Topics	Case Studies
Analytics with SQL	• Introduction to SQL and different types of databases • Fundamentals of SQL and Data • Management in MySQL Workbench • Advanced SQL Query Techniques for Data • Retrieval and Documentation • CRUD Operations and Data Integrity • Database Schema Management • Operations • String Operations • Aggregate Functions • Joins, Constraints and ER Modelling • Advanced Query writing using Joins and Aggregate Functions • Case Statements for Conditional Logic and Aggregation • Common Table Expressions (CTEs) and • Subqueries in SQL • Date Manipulation - Data Types and • Functions • Fundamentals of Window Functions and it's applications • Views, Indexes and Data Partitioning • Stored Procedures and Triggers • TCL and DCL Commands	Retail Store E-Com Business

Module	Topics	Case Studies
Python Programming	• Introduction to Python and AIML • Fundamentals of Python: Syntax, Variables, and Data Types • Types and Order of Operators • Strings : Operations and Methods • Data Structure - List, Tuple, Set, Dictionary • Conditional Statements • Looping Statements • Control Transfer Statements - Break, Continue and Pass • Functions • Exception Handling • Modules • File Handling , Overview of library • Numpy - Libraries for Array Management • Attributes, Operations, and Statistical Analysis using NumPy • Data Structures and Series Management using Pandas • Data Manipulation and Analysis in Pandas: File Handling, Data • Selection, and Aggregation • Data Visualization using Matplotlib and Seaborn • Concepts and Application of OOPS • Database Connectivity : Using Libraries for Data Management	Covid-19 PhonePe Digital Payments

Module	Topics	Case Studies
Statistics & EDA with Python	• Introduction to Statistics • Types of Data and Data Collection • Sampling Techniques & Measures of Central Tendency • Descriptive Statistics: Measures of dispersion • Introduction to Probability in Statistics • Probability Distributions • Central Limit Theorem and Sampling • Distributions and their properties • Hypothesis Testing • Confidence Intervals • Statistical Tests and uses for bivariate analysis	Loan Default Pro Kabaddi League Superstore Sales
Generative AI (Live lectures)	• Introduction to Generative AI: Concepts, tools, and applications • Prompt Engineering Techniques for crafting effective prompts • Generative AI in Excel for Data processing and automation • Python Development with Generative AI: prompting, assistance, and best practices. • Generative AI for SQL Coding: prompting, debugging, and optimization • Generative AI for Data Analysis and Visualization: Summarization, EDA, and best practices.	Credit Risk Modelling