Course Title: - Data Analyst (130 hours)

This comprehensive course equips students with essential skills for data analysis. Beginning with foundational concepts, the course prepares students to excel in business analytics, utilizing Excel's power, statistical tools, and Power BI. Further, students delve into SQL's querying prowess, master Python and R programming for data manipulation, analysis, and visualization. Tableau skills round out the curriculum, enhancing data presentation and insights. This course readies students for certification and real-world data challenges.

Key Learning Objectives	Course Content	Hours
Module 1: At the end of the module the students will be able to: ➢ Understand the role of Business Analytics in decision-making. ➢ Apply formatting and conditional formatting techniques in Excel. ➢ Create and analyze data using Pivot Tables. ➢ Develop interactive dashboards for data visualization. ➢ Utilize Excel's built-in functions for Business Analytics. ➢ Perform basic data analysis using statistical methods. ➢ Introduction to Power BI and its features.	**Module 1: Business Analytics with Excel** • Introduction to Business Analytics • Formatting Conditional Formatting and Important Functions • Analysing Data with Pivot Tables • Dashboarding • Business Analytics with Excel • Data Analysis Using Statistics • Power BI • **Summary and Review** • **Online quiz test**	**20**
Module 2: At the end of the module the students will be able to: ➢ Grasp fundamental SQL statements for database querying. ➢ Learn backup and restore processes for data integrity. ➢ Understand filtering and ordering data using SELECT commands.	**Module 2: SQL** • Fundamental SQL Statements • Restore and Back-up • Selection Commands: Filtering • Selection Commands: Ordering • Alias, Aggregate Commands • Group By Commands	**25**

➢ Master using aliases to improve query readability. ➢ Perform aggregate functions and use GROUP BY commands. ➢ Gain proficiency in writing conditional statements in SQL. ➢ Explore various types of joins for combining data. ➢ Understand and utilize subqueries effectively. ➢ Learn about database views and index optimization. ➢ Familiarize yourself with string, mathematical, and date/time functions in SQL. ➢ Explore user access control mechanisms in SQL.	• Conditional Statement • Joins, Subqueries, Views and Index • String Functions • Mathematical Functions • Date and Time Functions • Pattern (String) Matching • User Access Control Functions • **Summary and Review** • **Online quiz test**	
Module 3: At the end of the module the students will be able to: ➢ Set up the Python environment and understand its essentials. ➢ Grasp the fundamentals of Python programming. ➢ Gain an overview of data analytics and its importance. ➢ Learn statistical computing concepts. ➢ Master mathematical computing using NumPy. ➢ Manipulate and analyze data using Pandas. ➢ Create data visualizations using Python libraries. ➢ Introduction to model building concepts using Python.	**Module 3: Programming Foundation and Data Analytics with Python** • Course Introduction • Python Environment Setup and Essentials • Python Programming Fundamentals • Data Analytics Overview, Statistical Computing • Mathematical Computing using NumPy • Data Manipulation with Pandas • Data visualization with Python • Intro to Model Building • **Summary and Review** • **Online quiz test**	**30**

Module 4: At the end of the module the students will be able to: ➢ Understand the basics of the R programming language. ➢ Learn about data structures in R. ➢ Grasp fundamental programming concepts in R. ➢ Work with different types of data in R. ➢ Explore string and date manipulation in R.	**Module 4: R Programming for Data Science** • R Basics • Data Structures in R • R Programming Fundamentals • Working with Data in R • Stings and Dates in R • **Summary and Review** • **Online quiz test**	**12**
Module 5: At the end of the module the students will be able to: ➢ Introduction to the role of Business Analytics. ➢ Understand the basics of R programming. ➢ Learn about different data structures in R. ➢ Create meaningful data visualizations. ➢ Grasp statistical concepts relevant to data science. ➢ Learn about regression analysis for predictive modeling. ➢ Understand classification techniques for machine learning. ➢ Explore clustering algorithms for data segmentation. ➢ Gain insights into association analysis.	**Module 5: Data Analytics with R** • Introduction to Business Analytics • Introduction to R Programming • Data Structures • Data Visualization • Statistics for Data Science • Regression Analysis • Classification, Clustering, Association • **Summary and Review** • **Online quiz test**	**23**

Module 6: At the end of the module the students will be able to: ➢ Get started with Tableau and understand its interface. ➢ Dive into core Tableau features and concepts. ➢ Create various types of charts and visualizations. ➢ Work with metadata to enhance data understanding. ➢ Learn to apply filters to data visualizations. ➢ Apply analytics to your Tableau worksheets. ➢ Create interactive dashboards for data presentation. ➢ Understand how to modify data connections. ➢ Introduction to Level of Detail (LOD) concepts in Tableau.	**Module 6: Tableau Training** • Getting Started with Tableau • Core Tableau in Topics • Creating Charts in Tableau • Working with Metadata • Filters in Tableau • Applying Analytics to the worksheet • Dashboard in Tableau • Modifications to Data Connections • Introduction to Level of Details in Tableau (LODS) • **Summary and Review** • **Online quiz test**	**20**