

# Data Analyst Course Content

( Power BI+SQL+Python+Tableau+Excel with 1 Project )

## Introduction to Data Analytics

- Data Analytics Overview
- Importance of Data Analytics
- Types of Data Analytics
- Descriptive Analytics
- Diagnostic Analytics Predictive Analytics
- Prescriptive Analytics
- Benefits of Data Analytics
- Data Visualization for Decision Making
- Data Types, Measure Of central tendency, Measures of Dispersion
- Graphical Techniques, Skewness G Kurtosis, Box Plot Descriptive Stats
- Sampling Funnel, Sampling Variation, Central Limit Theorem, Confidence interval

## Excel

- Text to Columns
- The Concatenate Function
- The Right Function with Concatenation Absolute Cell References
- Data Validation
- Time and Date Calculations Conditional Formatting
- Exploring Styles and Clearing Formatting
- Using the IF Function
- Changing the “Value if false” Condition to Text Pivot Tables
- Creating a Pivot Table
- Specifying PivotTable Data
- Changing a PivotTables Calculation Filtering and Sorting a PivotTable
- Creating a PivotChart
- Grouping Items
- Creating a Simple Chart
- Charting Non-Adjacent Cells
- Chart Types
- Changing the Way Data is Displayed Moving the Legend
- Formatting Charts Adding Chart Items Formatting All Text
- Formatting and Aligning Numbers Formatting the Plot Area○ Formatting Data Markers
- Pie Charts
- Creating a Pie Chart
- Moving the Pie Chart to its Own Sheet Adding Data Labels
- Exploding a Slice of a Pie Chart
- Data Analysis – Overview
- Types of Data Analysis Data Analysis Process
- Working with Range Names
- Copying Name using Formula Autocomplete Range Name Syntax Rules
- Creating Range Names
- Creating Names for Constants Managing Names

- Scope of a Name Editing Names
- Applying Names
- Using Names in a Formula
- Table Style Options
- Table Styles
- Cleaning Data with Text Functions
- Extracting Year, Month, Day from Date
- Extracting Day of the Week from Date
- Obtaining Date from Year, Month and Day
- Calculating Years, Months and Days between two dates
- Conditional Formatting
- Sort by a Custom List
- Sort by Rows
- Sort by more than one Column or Row
- Filter by Selected Values and Filter by Text
- Quick Analysis with TOTALS
- Lookup and Pivoting

## SQL

- Introduction to RDBMS
  - Codd rules
  - Centralized architecture
  - Distributed architecture
  - Normalization
- Introduction to SQL SERVER database
  - Architecture-Installation
  - Versions
- Sub Language Commands (T-SQL)
  - Data Definition Language (DDL)
  - CREATE, ALTER, DROP
  - Data Retrieval Language (DRL)
  - SELECT
  - Data Manipulation Language (DML)
  - INSERT, UPDATE, DELETE
  - Transaction Control Language (TCL)
  - COMMIT, ROLLBACK
  - Database Security and Privileges (DCL)
  - GRANT, REVOKE
- Working with Operators
  - Comparison and Conditional Operators
  - Arithmetic and Logical Operators
  - Char functions
  - Date functions
  - Aggregate functions
  - Special Operators
  - IN (NOT IN), BETWEEN (NOT BETWEEN), LIKE (NOT LIKE), IS NULL
- Working with Referential Integrity
  - Unique
  - Not null
  - Primary Key

- Check
- Foreign Key
- o Group by and Having Clause
- o Working with Sub Queries
- o Joins and Set operators
- o Working on Partitions
- o Database Objects
- View
- Index
- Sequence
- Stored Procedure
- o OLAP Queries
- Case, rollup, cube
- CTE and UDF
- Rank/Dense\_rank/row\_num and etc
- Window functions

#### Python:

- o Variable and print statement
- o Numbers
- o Strings
- o Lists
- o Dictionaries
- o Tuples
- o Mutable vs Immutable
- o What are Operators?
- o Arithmetic Operators
- o Comparison Operators
- o Logical Operators
- o Assignment and Bitwise Operators
- o Python: Handling Program Flow
- o The if-elif-else Statement
- o The while Loop
- o The for Loop
- o Loop Control Statements
- o Print and Input Statements
- o Opening and Closing Files
- o File Handling
- o What are Errors
- o Raising Exceptions
- o Exception Handling with Python
- o Creating Functions
- o Lambda Functions

#### Power BI Desktop

- o Overview of Power BI Desktop
- o Data Sources in Power BI Desktop
- o Connecting to a data Sources
- o Query Editor in Power BI
- o Clean and transform your data with Query Editor
- o Combining Data – Merging and Appending

- Cleaning irregularly formatted data
- Views in Power BI Desktop
- Modelling Data
- Manage Data Relationship
- Cross Filter Direction
- Create calculated tables and measures
- Optimizing Data Models

#### Data Analysis Expressions (DAX)

- Essential concepts in DAX
- Why is DAX important?
- DAX Syntax
- Data Types in DAX
- Calculation Types
- DAX Functions
- Measures in DAX
- DAX Operators
- DAX tables and filtering
- DAX queries
- DAX Parameter Naming

#### Data Visualization

- Introduction to visuals in Power BI
- Charts in Power BI
- Matrixes and tables
- Slicers
- Map Visualizations
- Gauges and Single Number Cards
- Modifying colors in charts and visuals
- Shapes, text boxes, and images
- What Are Custom Visuals?
- Page layout and formatting
- KPI Visuals
- Z-Order

#### Introduction to Power BI Q&A and Data Insights

- Introduction to Power BI Service
- Dashboard vs. Reports
- Quick Insights in Power BI
- Creating Dashboards
- Configuring a Dashboard
- Power BI Q&A
- Ask questions of your data with natural language
- Power BI embeddedDirect Connectivity
- Introduction to using Excel data in Power BI
- Exploring live connections to data with Power BI
- Connecting directly to SQL Azure, HD Spark, SQL Server Analysis Services/ My SQL
- Introduction to Power BI Development API
- Import Power View and Power Pivot to Power BI
- Power BI Publisher for Excel
- Content packs

- Introducing Power BI Mobile

#### Tableau:

- Help MENU AND SAMPLES
- Connecting to data
- Dimensions and measures
- The tableau interface
- Single table & Multiple table
- Copy and paste
- Tableau Advanced
- Custom SQL
- Editing data connection
- Data menu
- Exporting data connection
- Size and transparency
- Highlighting
- Dual Axis multiple measures
- Dates
- Difference from previous
- Table calculations with other calculations
- Running total
- Cumulative metrics
- Creating custom calculations
- If/then calculations
- Date calculations
- Table calculations
- Efficiency Tips
- Visual Analytics
- Grouping
- Aliases
- Filtering
- Cross Tabs-(Pivot tables)
- Aggregation & Disaggregation
- Trend lines
- Page trial
- Total & Subtotal
- Labels and Annotations
- Sharing Workbooks
- Publish to Reader
- Publish to Office
- Publish to PDF

#### Advanced Topics:

- PBI Report Studio
- PBI Services Advance Concepts
- Introduction to Cloud Concepts
- Introduction to Azure Data Factory
- Introduction to Power Apps