**COURSE OUTLINE: BEGINNER LEVEL: POWER BI AND EXCEL (FIRST MONTH)**

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| **S/N** | **TOPICS** | **OUTLINE** |
|  | PART 1: EXCEL 2021 |  |
| 1 | Introduction to Data Analytics | Class Objectives  Course Outline  Prepare Data  Objective  Measures |
| Introduction to Excel 2016 | Excel Environment  Formulas  Functions  Formats |
| 2 | Clean Data | Data Quality Dimensions (DQD)  Power Query  Text, Numbers, Dates, General |
| Data Transformation 1 | Multiple Datasets (Worksheet, Workbooks)  Merge  Append  Relate (Power Pivot) |
| 3 | Model, Analyze, Visualize  Data | Pivot Tables Slicers  Power Pivot |
| 4 | Dashboard | Dashboard |
| 5 | PART 2: POWER BI |  |
| Get and Clean Data | Conditional Statement |
| 6 | Data Transformation 2 | Entity Relationship Diagram (ERD)  Unpivoting  Fill  Transpose  Group  Duplicate / Reference Table |
| 7 | Data Analysis Expressions  (DAX) |  |
| 8 | Advanced Charts | KPI  Gauge Chart |

**COURSE OUTLINE: DATA ANALYTICS USING SQL & TABLEAU (2ND MONTH)**

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| **S/N** | **TOPICS** | **OUTLINE** |
|  | **SQL USING SSMS** |  |
| 1 | Introduction to SQL | A. Overview of MySQL  B. Understanding Relational Databases  C. Installing SSMS  D. Setting up SSMS |
| Creating and Managing Database | A. Creating a new database  C. Creating database tables  D. Adding data to tables  E. Modifying tables  F. Deleting tables |
| 2 | Retrieving Data with SELECT Statements | A. Querying single table using SELECT  B. Filtering data using WHERE clause  C. Sorting data using ORDER BY clause  D. Limiting and paging results |
| Joining Tables | A. Inner join  B. Left join  C. Right join |
| 3 | Advanced SQL Concepts | A. Aggregation and Grouping  B. Subqueries  C. Views  D. Indexes  E. Transactions  F. Stored Procedures |
|  | A. Recap of MySQL concepts and techniques  B. Next Steps for Further Learning |
| 4 | Project | Project |
| 5 | Introduction to Tableau Data Analytics | A. Overview of Tableau and its features  B. Importance and benefits of data analytics in Tableau |
| 6 | Data Preparation | Data sources and connections  1. Importing data from various sources  2. Connecting to databases and spreadsheets  B. Data cleaning and transformation  1. Handling missing values  2. Filtering and sorting data  3. Data reshaping and pivoting  4. Merging and joining datasets |
| 7 | Data Visualization | Understanding Tableau's visual interface  B. Creating basic visualizations  1. Bar charts  2. Line charts  3. Scatter plots  4. Pie charts  C. Customizing visualizations  1. Formatting options (colors, labels, titles)  2. Adding filters and parameters  3. Implementing interactive features (tooltips, drill-downs)  D. Advanced visualizations  1. Maps and geospatial visualizations  2. Tree maps and heat maps  3. Dual-axis charts  4. Box plots and histograms |
| 8 | Sharing and Collaboration | Publishing workbooks  1. Saving and exporting visualizations  2. Publishing to Tableau Server or Tableau Public  B. Collaborative features  1. Sharing workbooks with teammates  2. Adding comments and annotations  3. Version control and revision history |
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