Course Title: Data Analysis Essentials: SQL, Excel, and Visualization

Course Duration: 2 Months [Data Analytics Course v2](#)

Course Overview:
This comprehensive course is designed to equip students with the essential skills and knowledge required to excel in the field of data analysis. Over the span of two months, students will delve into three key areas: SQL, Excel, and a visualization tool (such as Tableau or Power BI). By combining these powerful tools, students will gain a solid foundation in data analysis and visualization, enabling them to tackle real-world data challenges with confidence.

Course Structure:
Month 1: SQL Fundamentals

Module 1: Introduction to SQL
- Understanding databases and their importance in data analysis
- Key SQL concepts: tables, queries, and relationships
- Basic SQL syntax and commands

Module 2: Data Manipulation with SQL
- Selecting, filtering, and sorting data
- Joining tables to combine data from multiple sources
- Aggregating data using functions and grouping

Module 3: Data Management with SQL
- Creating and modifying database tables
- Adding, updating, and deleting records
- Working with constraints and indexes for data integrity

Module 4: Advanced SQL Techniques
- Subqueries and derived tables
- Working with views and stored procedures
- Performance optimization and query tuning

Month 2: Excel and Visualization

Module 1: Excel Fundamentals for Data Analysis
- Understanding spreadsheet structure and data types
- Data cleaning and formatting techniques
- Using Excel functions for calculations and data manipulation

Module 2: Data Analysis and Visualization in Excel
- Exploratory data analysis techniques
- Pivot tables and pivot charts for summarizing data
- Creating interactive dashboards in Excel

Module 3: Introduction to Data Visualization Tools

- Overview of popular visualization tools (e.g., Tableau or Power BI)
- Connecting to data sources and importing data
- Building interactive visualizations and dashboards

Module 4: Advanced Data Visualization Techniques
- Design principles for effective data visualization
- Using advanced features of the chosen visualization tool
- Storytelling with data: creating compelling narratives

Course Project:
Students will be required to complete a hands-on project that incorporates the skills learned throughout the course. They will work on a real-world dataset, performing data analysis tasks using SQL, Excel, and the chosen visualization tool. The project will be an opportunity for students to showcase their understanding of data analysis concepts and demonstrate their ability to derive actionable insights from data.

Additional Resources:
- Recommended readings and online tutorials for further practice
- Practice exercises and quizzes for self-assessment
- Discussion forums for students to interact and seek clarification

By the end of this course, students will have a strong foundation in SQL, Excel, and a visualization tool, enabling them to confidently tackle data analysis tasks and present insights effectively.