1.Database Foundations

* Introduction to databases
* Understanding relational DBMS
* Setting up SQL Server & installing GUI
* Creating first connection
* Creating a database and table using GUI

2.SQL Basics

* Understanding SQL programming language
* SQL Data Types
* SQL Constraints
* SQL sublangauges (SQL commands): DDL, DML, DCL, TCL & DQL
* SQL Syntax and best practices
* Creating database schema

3.Querying

* Master SELECT Queries
* SQL operators: Arithmetic, logical and comparison
* Aliases
* SQL clauses
* Data manipulation
* Importing flat files into a database

4.Numeric and Aggregate Functions

* Introduction to SQL functions
* Numeric functions
* Transforming columns using numeric functions
* Aggregate functions
* Filtering and analyzing summary statistic report

5.Joins and Set operations

* Understanding different SQL Joins
* Set operations

Manipulating data using joins and set operators

6.Entity-Relationship Data Models

* Understanding ER data models
* Generating ERD using Reverse Engineering
* Creating database using Forward Engineering
* Dropping Tables with relations

7.Normalization

* Understanding normalization concept
* Implementing different types of normalizations (1NF,2NF,3NF etc)
* Understanding database anomalies

8.Optimizing Queries

* Subqueries (Nested Queries) and Correlated Subqueries
* Indexes and indexing strategies
* Common Table Expressions (CTEs)
* Recursive CTEs
* CTEs vs Subqueries

9.Views, stored procedures and triggers

* Creating views
* Materialized views
* Creating temporary tables
* Creating stored procedures
* Creating triggers

10.Windows Functions

* Understanding windows functions in SQL
* Top-N analysis using Ranking windows functions
* Using valued-based windows functions

11.String, Date and Miscellaneous functions

* Understanding miscellaneous functions
* Converting between data types
* String functions
* Cleaning data using string functions
* DateTime functions
* Advanced string dunctions

12.Control Flow functions

* Understanding control flow functions
* Grouping with a Case statement
* Conditional calculations using IF
* Combining CASE and IF

13. Importing and Exporting SQL Data

* Exporting and importing .sql (MySQL Dump)
* Backing up and Restoring Databases
* Command-line Import/Export
* Using GUI Tools for Data Transfer