SQL Course Content for Fresher Training

**Duration: 5 days**

**Setup Requirements**

* **Hardware:**
  + 4 GB RAM
  + Intel Pentium 4[2+GHz recommended]s

**Software:**

* + Windows 10
  + SQL server 2016 or greater
  + Supported operating systems for SQL Server have built-in network software. Named and default instances of a stand-alone installation support the following network protocols: Shared memory, Named Pipes, and TCP/IP.

**Day 1**

# Basic Database Concepts

* + Concepts of Data, Metadata, Files
  + Concepts of DBMS
  + Database Models
  + File Management Systems
  + Relational Database Systems
  + Procedural & Non procedural approaches
  + Database Design

# Normalization

* + First Normal Form
  + Second Normal Form
  + Third Normal Form
  + E.F. Codd's Rules

# Introduction to SQL Server

* + Features of SQL Server
  + Different Editions of SQL Server
  + Components of SQL Server
  + Services of SQL Server

# Database Design

* + Logical & Physical database design
  + Relational database design
  + Creating databases

1. [**Introduction to Oracle Database**](https://docs.oracle.com/en/database/oracle/oracle-database/18/cncpt/introduction-to-oracle-database.html#GUID-A42A6EF0-20F8-4F4B-AFF7-09C100AE581E)
   * [About Relational Databases](https://docs.oracle.com/en/database/oracle/oracle-database/18/cncpt/introduction-to-oracle-database.html#GUID-166C1E31-CDBC-47D9-867A-3D4C9AAC837D)
   * Schema Object
   * Data Access
   * Transaction Management
   * Oracle Database Architecture
   * Oracle Database Documentations

Day 2

# Transact-SQL (T-SQL)

* + Introduction to SQL Server Management Studio
  + Basics of SQL
  + Data types, expressions, operators
  + Working with Queries & Clauses
  + Creating Databases
  + Creating Tables, Stored Procedures
  + Working with Indexes & Views

# Sub queries

* + Nested sub queries
  + Correlated sub queries
  + Derived tables

# Implementation of Data integrity

* + Entity integrity
  + Domain integrity
  + Referential integrity
  + Types of constraints

Day 3

# Data Definition Language (DDL)

* + Creation of table
  + Modifying the structure of a table
  + Dropping a table
  + Working with different options

# Data Manipulation Language (DML)

* + Inserting, updating & deleting operations
  + Operators, Built-in functions, Grouping
  + Working with multiple tables

# Joins

* + Introduction to Joins
  + Inner join
  + Outer join
  + Cross joins
  + Unions

Day 4

# Working with Indexes

* + Introduction to indexes
  + Creating, dropping indexes
  + Complex indexes
  + Clustered & non clustered indexes

# Implementing Views

* + Introduction & advantages of views
  + Creating views
  + Altering, dropping views

# Data Control Language (DCL)

* + Creating Users and Roles
  + Granting & Revoking of Roles & Privileges

# Transaction Control Language (TCL)

* + Introduction
  + Transactions process & types of transactions (Implicit, Explicit)
  + Working with Locks and Types of locks

Day 5

# Implementing stored procedures

* + Introduction to stored procedures
  + Creating, executing, modifying, dropping SPs
  + Executing extended SPs

# Implementing User Defined Functions

* + Introduction
  + Creating, executing, altering, dropping UDF's
  + Deterministic, non-deterministic functions
  + Scalar, multi-statement, built-in functions

# Implementing Triggers

* + Introduction to Triggers
  + Constraints v/s Triggers
  + Creating, altering, dropping triggers
  + For/After/instead of triggers