COURSE OUTLINE

SQL

DAY-1

- Introduction to Database

- Types of Data models

- Database Operations

- Advantages of DBMS

- Introduction to Normalization.

- Need for Normalization/Denormalization.

- Normalization:

  - 1ST Normal Formal
  - 2ND Normal Formal
  - 3RD Normal Formal

- DDL- Understand how to create different database objects.

- DDL to Create and Manage Tables

- DDL Expressions - CREATE, ALTER, DROP, TRUNCATE, COMMENT, RENAME.

- Types of Constraints.

- DML- Describe how to manipulate data.

- Explain how to retrieve data from tables using Filter's

- **In Class Lab Exercise:** -   Sql Queries Using select, where, order by Expressions.
- **Take Home Lab Exercise :**- Sql Queries Using select, where, order by Expressions.

DAY -2

- Functions in SQL.

- Types of Single Row Functions

- Explain how to use single-row functions in SQL

- Explain how to use group functions in SQL

- **In Class Lab Exercise:** -   Sql Single-Row Functions, Group Functions Expressions.

- **Take Home Lab Exercise:** -   Sql Single-Row Functions, Group Functions Expressions.

DAY-3

- Explain how to retrieve data from multiple tables using joins
- Apply set operations on tables
- Views , Advantages of Views , Creating a View , Creating a Complex View ,
  Rules For Performing DML Operations on a View.
- Using the Check option clause , Indexes , Creating an Index.
- **In class Lab Exercises: -** SQL JOINs
- **Take Home Lab Exercises: -** SQL JOINs

DAY-4

- Show How to use Sub-Queries.

- Group Functions in Subqueries.

- Subqueries Within Subqueries using any clause, using 'ALL' clause, 'IN', 'NOT IN ' clause ,
  multiple-columns in subquery, 'Null' Values in Subquery, Correlated Subquery, Exists
  Operator.

- Sub-queries with aggregate functions.

- Sub-queries with conditional logic.

- Joining sub-queries.

- SQL windows functions

- SQL String functions to clean data

- **In class Lab Exercises** : **-**Subqueries .
- **Take Home Lab Exercises** : **-**Subqueries .