

Textbook chapters are listed with the associated topics.

Also, consider the associated Links and References (Canvas, On-Line) provided in the class schedule.

## Introduction of Database and SQL

- **Ch 1: Introduction**

- Databases (What?, Why?, How?)
- Relational Data Model and Databases
- Database Design
- Database Architecture

- **Ch 2: Introduction to the Relational Model**

- Structure of Relational Databases
- Database Schema
- Keys
- Schema Diagrams
- Relational Query Languages
- The Relational Algebra
  - Select and Project Operators, Expressions, Set Operators, Join, Cartesian Product, Renaming, Natural (Inner) Join.

- **Ch 3: Introduction to SQL**

- Overview of The SQL Query Language
- SQL Data Definition
- Basic Query Structure of SQL Queries
  - Select, Insert, Update, Delete
- Order By
- Set Operations
- Null Values
- Aggregate Functions
- Grouping, Having Clause
- Subqueries (Nested Queries)

- **Ch 4: Intermediate SQL**

- Join Expressions
  - Natural (Inner) Join, Left (Outer) Join, Right (Outer) Join, Self Join
- Views
- Integrity Constraints
- SQL Data Types and Schemas
- Authorization