

Textbook chapters are listed with the associated topics.

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

**Topics:**

- **Ch 1: Introduction**

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

- **Ch 2: Relational Algebra (RA)**

- Structure of Relational Databases
- Database Schema
- The Relational Algebra
  - Select
  - Project
  - Set Operators (union, intersection, and set-difference/minus)
  - Join
  - Cartesian Product (Cross Join)
  - Assignment
  - Renaming

- **Chs 3, 4, and 5: SQL**

- Overview of The SQL Query Language
- SQL Data Definition (DDL vs. DML)
- Keys (Super Keys, Candidate Keys, Primary key, Foreign Keys)
- Basic Query Structure of SQL Queries
  - Select, Insert, Update, Delete
- Order By
- Set Operations (Union, Intersection and Set-difference/minus)
- Null Values
- Aggregate Functions (count(), min(), max(), sum(), avg())
- Group by, Having
- Subqueries (Nested Queries)
- Join Expressions
  - Cross Join, (Inner) Join, Left (Outer) Join, Right (Outer) Join, Self-Join
- Views
- Integrity Constraints
- SQL Data Types and Schemas
- Authorization
- Functions and Procedures
- Cursor
- Triggers