

Topics covered in class through the end of Wed. 1/26 (i.e., through the end of Section 4, SQL) are relevant for the midterm:

1. **Motivation and Purpose of DBMS**
2. **Database Design and the E/R Model**
 - Basic concepts: entities and entity types, attributes and keys, relationships and relationship types
 - Entity-Relationship schema (aka ER diagram)
 - Constraints on relationship types
 - Design choices
 - Enhanced Entity-Relationship model features
 - Steps in designing an ER schema
 - Translation of an ER schema to tables
3. **Relational Model and the Relational Algebra**
 - Fundamental Concepts of the Relational Model
 - Integrity Constraints
 - Translation from ER \rightarrow Relational Database Schema
 - Relational Algebra
4. **SQL**
 - Basic Queries in SQL
 - Set Operations on Relations
 - Nested Queries
 - Null Values
 - Aggregate Functions and Grouping
 - Data Definition Language Constructs
 - Insert, Update, and Delete Statements
 - Views (Virtual Tables)