**COM2058 Database Management**

**2024-2025 Spring**

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**Textbook:** Fundamentals of Database Systems, 6th Edition, Ramez Elmasri, Shamkant B. Navathe

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| **Week** | **Tentative Schedule** | **LAB** |
| 1 (18.2.2025) | Introduction to Course |  |
| 2 (25.2.2025) | Chapter 1: Databases and Database Users  Chapter 2: Database System Concepts and Architecture (Partially) |  |
| 3 (4.3.2025) | Chapter 3: The Relational Data Model and Relational Database Constraints | LAB1 |
| 4 (11.3.2025) | Chapter 4: Basic SQL | LAB2 |
| 5 (18.3.2025) | Chapter 5: More SQL: Complex Queries, Triggers, Views, and Schema Modification | LAB3 |
| 6 (25.3.2025) | Chapter 6: The Relational Algebra and Relational Calculus (Partially) | LAB4 |
| 7 (1.4.2025) | No Classes |  |
| 8 | Midterm (Not sure yet) |  |
| 9 (15.4.2025) | Chapter 7: Data Modeling Using the Entity-Relationship (ER) Model  Chapter 8: The Enhanced Entity-Relationship (EER) Model | LAB5 |
| 10 (22.4.2025) | Chapter 9: Relational Database Design by ER- and EER-to-Relational Mapping |  |
| 11 (29.4.2025) | Chapter 14: Web Database Programming Using PHP | LAB6 |
| 12 (6.5.2025) | Chapter 15: Functional Dependencies and Normalization for Relational databases | LAB7 |
| 13 (13.5.2025) | Chapter 21: Introduction to Transaction Processing Concepts and Theory | LAB8 |
| 14 (20.5.2025) | Chapter 22: Concurrency Control Techniques  Chapter 23: Database Recovery Techniques |  |
| 15 (27.5.2025) | Review |  |

**Grading:**

Midterm: %20

Project: %10

Lab Exam: %10 (The students need to attend at least 5 labs to take Lab Exam)

Final: %60

**Learning Outcomes:**

1. Produces an Entity-Relationship (ER) or an Enhanced Entity-Relationship (EER) model from a realistic problem specification.

2. Produces a mapping from ER or EER model to relational schema.

3. Identifies and explains the constraint of relational databases.

4. Understands the fundamentals of Relational Algebra.

5. Writes SQL queries to create and maintain a relational database.

6. Writes web database programs using PHP.