Database Management
CS579 A3, Fall 2024

- **Course Format**: On Campus
- **Time and Location**: Monday 6:00 – 8:45 PM, CGS 323

- **Instructor**: Jae Young Lee
- **Office**: Room 303, 1010 Commonwealth Ave.
- **Phone**: 617-358-5165, **E-mail**: jaeylee@bu.edu
- **Office Hours**:
  - 3 – 4 PM Tuesday and Thursday, and by appointment
  - Can meet me in person (in my office) or via zoom
  - No office hours during the final exam week (12/16 – 12/20)

- **Course Objectives**

  The goal of this course is to study basic concepts of database systems with emphasis on relational databases. The topics include:
  - Entity-relationship model
  - Relational data model
  - SQL DML and DDL
  - Relational algebra
  - Database design for relational databases
  - Functional dependencies and normalization
  - Indexes, stored procedures, and triggers
  - Introductory topics: Introduction to query processing and transaction management
  - If time allows, we will also briefly discuss how to connect to MySQL from a Python program.

- **Prerequisites**: MET CS231 or MET CS232 or instructor's consent

- **Text**: R. Elmasri and S.B. Navathe, "Fundamentals of Database Systems," 7th Ed., 2016, Addison Wesley

- **Courseware**: BU Blackboard (onlinecampus.bu.edu)

- **References**: Our textbook is comprehensive. There are also many good database books, and any book which you think would best suit your style should be OK as a reference. A book on SQL will be also helpful.

- **Grading**:
  - Midterm: 25%, Final: 35%
  - Homework: 20%
  - Class Project: 20%

- **Letter Grade**:
  $90 \leq G < 94$: A- $94 \leq G$: A,
  $80 \leq G < 83$: B- $83 \leq G < 87$: B $87 \leq G < 90$: B+

$70 \leq G < 73$: C- $73 \leq G < 77$: C $77 \leq G < 80$: C+
$60 \leq G < 70$: D
$G < 60$: F

Note: Course grades will not be automatically rounded up. For example, a course grade of 93.9 will receive a letter grade A-, not A.

- **Assignment**
  - There will be total 12 assignments – 8 homework assignments and 4 lab assignments (the number of assignments is subject to change according to the actual progress of the class).
  - Solutions will be discussed in the class.

- **Class Project**: This is a design and implementation of a database. The project will be assigned as 4 lab assignments, which follow typical database design process. Details will be discussed in the class.

- **Exam:** Both the midterm and the final exams are in-class, paper-based exams.

- **Academic Integrity Policy**
  - Cheating and plagiarism will not be tolerated in any Metropolitan College course. They will result in no credit for the assignment or examination and may lead to disciplinary actions.
  - Please take the time to review the Student Academic Conduct Code: http://www.bu.edu/met/metropolitan_college_people/student/resources/conduct/code.html.
  - This should not be understood as a discouragement for discussing the material or your particular approach to a problem with other students in the class. On the contrary – you should share your thoughts, questions and solutions. Naturally, if you choose to work in a group, you will be expected to come up with more than one and highly original solutions rather than the same mistakes.
- **Attendance and Absence**: Attendance is not required but strongly encouraged. If a student misses a class, it is his/her responsibility to study the material discussed during the missed class.

- **Late Policy**
  - All assignments are due at the beginning of the class on the due date.
  - If you submit an assignment late, there will be a late submission penalty of 10% per day.
  - If you obtain a permission **in advance**, the penalty will be waived.

- **Make-up Exam**
  - A make-up examination for the midterm can be arranged, but only if a student has an emergency (e.g., a medical emergency or an urgent family matter). Students may need to provide the instructor with an appropriate document (such as a letter from a physician).
  - There will be **no make-up exam for the final exam**. If a student cannot take the final exam on the designated day, she/he will receive an incomplete grade.

Tentative Schedule

- The schedule is subject to change according to the actual progress of the class.
- Students are strongly encouraged to read book chapters assigned for each lecture before coming to the class.

Week	Date	Lecture	Reading Assignment (Book chapters)	Assignment
1	9/9	Basic concepts	1, 2	H1
2	9/16	Conceptual design with ER	3	H2
3	9/23	ER, EER	3, 4	Lab 1
4	9/30	Relational data model	5	H3
5	10/7	Logical design, SQL	9	H4
6	**10/15 (Tuesday)**	SQL	6	Lab 2
7	10/21	**Midterm**		
8	10/28	SQL	6, 7	H5
9	11/4	SQL, Relational algebra	7, 8	Lab 3
10	11/11	Normalization	14	H6
11	11/18	Indexes	17	H7
12	11/25	Stored programs	Note	Lab 4
13	12/2	Query optimization, Transaction Processing	19.1 20.1, 20.2, 20.3, 20.6	H8
14	12/9	Oter topic		
15	**TBD**	**Final Exam**		

- **Email communication**:
  - When it is necessary to communicate to you, I will send an email to your BU email account. So, you need to check your BU email regularly, at least once a day.
  - When you send an email to me, include "CS579 A3" in the subject of your email.