# CS 579 Database Management – Summer 2018

- **Course Format**: On Campus
- **Time and Location**: Monday 6:00 – 9:30 PM, PSY B39

- **Instructor**: Jae Young Lee
- **Office**: Room 250, 808 Commonwealth Ave.
- **Phone**: 617-358-5165, **E-mail**: jaeylee@bu.edu
- **Office Hours**: 4:00 – 5:15 PM, Monday, and by appointment

- **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
    - Introduction to object-relational database
    - Introduction to database security
  - Other topics, if time allows

- **Prerequisites**: MET CS231 or MET CS232 or MET CS331 or instructor's consent

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

- **Courseware**: Blackboard Learn

- **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 and a book on Oracle will be also helpful.

- **Grading**:
  - Midterm: 35%, Final: 35%
  - Homework: 15%
  - Class Project: 15%

- **Letter Grade**:
  $90 \le G < 94$: A-  $94 \le G$: A
  $80 \le G < 83$: B-  $83 \le G < 87$: B  $87 \le G < 90$: B+
  $70 \le G < 73$: C-  $73 \le G < 77$: C  $77 \le G < 80$: C+
  $60 \le G < 70$: D
  $G < 60$: F

- **Assignment**
  - There will be five homework assignments (the number of assignments is subject to change according to the actual progress of the class).
  - Solutions will be discussed in the class when graded papers are returned.

- **Class Project**: This is a design and implementation of a database. The project follows a typical database design process and consists of four parts. Details will be discussed in the class.

- **DBMS**: Students will use an Oracle VM provided by the instructor for SQL practice and class project. If a student wants to use a different DBMS (e.g., MySQL or MS SQL Server), he/she must obtain an approval from the instructor and the student is responsible for DBMS dependent database features.

- **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 catch up with the material discussed during the missed class.

- **Late Policy**
  - All assignments are due at the beginning of the class on the due date.
  - A late homework is subject to a penalty of 10% per day. An exception may be made if a student is in an unusual/urgent situation and obtains permission from the instructor before the due date.

- **Make-up Exam**
  - A make-up examination for the midterm can be arranged when 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 received 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 | Topic | Reading Assignment Book Chapter(s) | Project Assignment |
|---|---|---|---|---|
| 1 | 5/21 | Basic concepts, Conceptual design and ER | 1, 2, 3 | |
| 2 | **6/1 (Friday)** | ER, EER | 3, 4 | Part 1 |
| 3 | 6/4 | Relational data model, Logical design | 5, 9 | |
| 4 | 6/11 | SQL | 6 | Part 2 |
| 5 | 6/18 | SQL | 7 | |
| 6 | 6/25 | **Midterm**, Relational algebra | 8 | |
| 7 | 7/2 | Normalization | 14 | Part 3 |
| 8 | 7/9 | Stored procedures and triggers | Note | |
| 9 | 7/16 | Indexes | 17 | Part 4 |
| 10 | 7/23 | Intro to query processing,<br>Intro to transaction processing | 19.1.2<br>20.1, 20.2, 20.3 | |
| 11 | 7/30 | Intro to ORDBMS,<br>Intro to database security | Note<br>Note | |
| 12 | 8/6 | **Final Exam** | | |

- **Communication**
  - All official announcements will be made in the class.
  - All assignments will be posted on the class web page.
  - **Important:** The primary method of communication is through in-class announcements. The class web page is only supplementary. So, if you miss a class you need to talk to a friend in the class or contact me to find out whether there was any important announcement.
  - **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 (e.g., once a day).