Database Management
CS579 Spring 2019

- **Course Format**: On Campus
- **Time and Location**: Wednesday 6:00 – 8:45 PM Hanscom AFB

- **Instructor**: John Russo
- **Phone**: 978-618-3917 (Cell),Skype: jrusso440 **E-mail**: jrusso44@bu.edu
- **Office Hours**: 5:00 – 6:00 PM, Wednesday in classroom

- **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
    - Survey of NoSQL databases
  - 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," Seventh Ed., 2016, Addison Wesley ISBN: 9780133970777

  J. Russo, SQL By Example, 2018, Momentum Press ISBN: 9781945612626

- **Courseware**: Blackboard Learn, URL: https://lms.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

- **Grading**:
  - Midterm: 25%, Final: 25%
  - Homework: 15%
  - Class Project: 35%

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

- **Assignment**
  - There will be five homework assignments (the number of assignments may vary 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. You will be expected to present your project to the entire class.

- **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 can be arranged only 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).

Tentative Schedule

- The schedule may be adjusted 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)	Project Assignment
1	1/23	Basic concepts	Elmasri 1, 2	
2	1/30	Conceptual design with ER	Elmasri 3	
3	2/6	EER, Relational data model	Elmasri 4.5	Part 1
4	2/13	Logical design	Elmasri 9	
5	2/20	Relational algebra, SQL	Elmasri 8,6 Russo 1,2	Part 2
6	2/27	SQL	Elmasri 6 Russo 3,4	
7	3/6	SQL	Elmasri 7 Russo 5	
8	3/13	Spring Break		
9	3/20	Midterm, SQL	Elmasri 7 Russo 5	
10	3/27	SQL	Elmasri 7 Russo 6,7	Part 3
11	4/3	Normalization	Elmasri 14	
12	4/10	Indexes	Elmasri 17	
13	4/17	Stored procedures and triggers		Part 4
14	4/24	Intro to query processing, Intro to transaction management Concurrency	Elmasri 18,19,20,21	
15	5/1	Project Presentations/ Review for Final		
16	5/8	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).