Database Management
CS579 Spring 2020

- **Course Format**: On Campus
- **Time and Location**: Monday 6:00 – 8:45 PM CAS218

- **Instructor**: John Russo
- **Phone**: (617) 960-8622 (cell),Skype: jrusso440 **E-mail**: jrusso44@bu.edu
- **Office Hours**: 5:00 – 6:00 PM, Monday 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:** Hoffer, Ramesh, Topi. Essentials of Database Management.
  Pearson 2016 ISBN: 9780133405682

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

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

- **References**: Our textbooks are 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**:
  $90 \leq G < 94$: 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

- **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 20% per week. An exception may be made if a student is in an unusual/urgent situation and obtains permission from the instructor before the due date.
  - Unless an exception has been made due to an urgent situation, no work will be excepted more than 2 weeks after 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	1/27	Basic concepts	Hoffer Chpt 1	
2	2/3	Conceptual design with ER	Hoffer Chpt 2	
3	2/10	EER, Relational data model	Hoffer Chpt 3	Part 1
4	2/18	Logical design Note: Tuesday class	Hoffer Chpt 4	
5	2/24	Relational algebra, SQL	Handout Russo 1,2	Part 2
6	3/2	SQL	Hoffer Chpt 6 Russo 3,4	Note: Tuesday class
7	3/9	Spring Break – No Class		
8	3/16	SQL	Hoffer Chpt 7 Russo 5	
9	3/23	Midterm, SQL	Hoffer Chpt 7 Russo 6,7	
10	3/30	Normalization	Hoffer Chpt 4	Part 3
11	4/6	Physical Design	Hoffer Chpt 5	
12	4/13	Stored procedures and triggers Note: Wednesday Class	Handout	Part 4
13	4/22	Intro to query processing, Intro to transaction management Concurrency		
14	4/27	Project Presentations/ Review for Final		
15	5/4	Final Exam		

- **Communication**
  - All official announcements will be made in the class.
  - All assignments will be posted on Blackboard.
  - **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).