

Database Management CS579 Summer 2017

- **Course Format:** On Campus
- **Time and Location:** Monday 6:00 – 9:30 PM MCS B23
- **Instructor:** John Russo
- **Phone:** 978-618-3917 (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:** Fundamentals of Database Systems, Elmasri. ISBN: 9780133970777
- **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. A book on SQL will be also helpful.
- **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 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	5/22	Basic Concepts, Conceptual Design with ERD	1,2,7	
2	6/2	EERD, Relational Data Model <i>Notice: Friday class to make-up for Monday</i>	8,3	Part 1
3	6/5	Logical Design	9	
4	6/12	Normalization, Relational Algebra	Handout, 6,4	Part 2
5	6/17	Relational Algebra, SQL	Handout and 4	
6	6/26	Midterm SQL	Handout and Chapter 4,5	Part 3
7	7/3	SQL Wrap-up Physical Design	5	
8	7/10	Physical Design, Indexes Query Design	18,19	
9	7/17	Stored Procedures and Triggers	Handout	
10	7/24	Intro to query processing, Intro to transaction management Survey of NoSQL	Handout 19,21	Part 4
11	7/31	Data Warehousing Big Data	Handout	
12	8/7	Project Presentations		

□ **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).