**Boston University**

**Metropolitan College**

**CS669 Database Design and Implementation for Business**

**Spring 2020**

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| Instructor: | John P. Russo |
| Email: | jrusso44@bu.edu |
| Telephone: | (617) 960-8622 (cell) |
| Office Hours: | Before and After Class |
| Class Meeting Time: | Wednesdays 6:00PM – 8:45PM PSY B53 |
| Class Website: | https://onlinecampus.bu.edu |

Course Objectives:

- Introduce students to relational database management systems and design
- Discuss SQL, how to create and query tables
- Introduce stored procedures, stored functions and triggers
- Discuss concurrency and transaction management
- Explain how queries are processed and can be optimized

Textbook: Coronel, C.M., Morris, S. Database Systems Design 13th Edition, Cengage. ISBN: 978-1337627900

You can also use the 12th edition

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

Software: Oracle RDBMS
Visio
LucidCharts

## Grading

CS669

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| Weekly Quizzes | 25% |
| Graded Homework | 15% |
| Final Exam | 20% |
| Term Project | 30% |
| Class Participation | 10% |

### Mapping to Modules on Blackboard Site

The course follows the same format as the E-Live course which is conducted over six weeks. I've stretched the modules out a bit more and of course added lectures and activities in class. You should submit all assignments in the Blackboard site referenced above. Feel free to utilize lectures and videos that have been provided within the Blackboard site. They are there for your benefit.

### Quizzes

There are a series of quizzes, usually every other week. These will be due during the following week. You will have a week to complete the quiz. It will always be on the prior two weeks' material.

### Homework Assignments

There are graded homework assignments, again usually one every two weeks or so. These reinforce the concepts of the lecture on database concepts. These also should be submitted on Blackboard. I have scheduled these so that they you can work on the homework during the week, bring your questions to ask before or after class and then submit the following weekend.

### Project

There is a required project. The deliverables for the project are designed to dovetail with what you have learned in class. There will be a final project report due during the last week of class.

### Final Exam

There will be an in-class final exam during the last class.

### Policy on Late Homework and Project Deliverables

Turning homework in late does not help either of us. It has been my experience that students get further behind when trying to catchup. Therefore, my policy is to deduct 10 points as a penalty for each week that an assignment or project deliverable is late up to three weeks. After three weeks, the assignment or deliverable cannot be submitted.

**Contacting Me**

The best way to reach me is via email. I will strive to get back to you within 24 hours. You can also send me a text or call on the cell phone number provided above.

**Class Structure**

I like to have time before and after class for office hours. We will spend some time at the beginning of class reviewing the previous week's materials and then we will jump into new material. I also like to break up our time between lectures and some activities.

**Participation**

I would like everyone in class to participate in discussions and activities. In addition, if you research a topic in the database area and would like to make a short presentation to the class, that would be beneficial to your participation grade. If you are looking for topics to present on, I am more than happy to provide some.

**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.

**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.

| Class Date | Topic | Reading | Assignment | Project | Quiz |
|---|---|---|---|---|---|
| Jan 22nd | Data Modeling | Chpts 1 and 2 | | | |
| Jan 29th | Intro to SQL | *12th Edition:* Coronel & Morris, sections 7.1 through 7.4 of chapter 7<br>*13th Edition:* Coronel & Morris, sections 7.1 through 7.3 of chapter 7, sections 8.1 and 8.2 in chapter 8 | SQL Lab1 | Iteration 1-Concept | 1 |
| Feb 5th | Relational Model and ERD | Chpts 3 & 4 | | | |
| Feb 12th | ERD Continued and Interconnecting Data with SQL | *12th Edition:* Coronel & Morris, sections 7.5 through 7.7 of chapter 7, section 8.1 of chapter 8<br>*13th Edition:* Coronel & Morris, sections 7.4 through 7.6 of chapter 7, sections 8.3 and 8.4 in chapter 8 (note that 8.4b, subqueries, will be covered in more detail later | SQL Lab 2 | | 2 |
| Feb 19th | Advanced data modeling | Chpt 5 | | Iteration 2 – Business Rules | |
| Feb 26th | Normalization | Chpt 6 | | | |

| Class Date | Topic | Reading | Assignment | Project | Quiz |
|---|---|---|---|---|---|
| March 4th | Aggregating Data | *12th Edition:* Coronel & Morris, section 8.3 and 8.4 of chapter 8. Note that section 8.2 will be read later *13th Edition:* Coronel & Morris, sections 7.7, 7.9, 7.10, and 7.11 of chapter 7 (note that section 7.8 regarding subqueries will be later). Section 8.5 of chapter 8. | SQL Lab 3 | Iteration 3 – Conceptual Design | 3 |
| March 11th | Spring Break | No *Class* | | | |
| March 18th | Database Design, Transaction Management and Concurrency Control | Chpts 9 and 10 | | | |
| March 25th | Database Programming | Chpt 8 | SQL Lab 4 | Iteration 4 – Logical Design | 4 |
| April 1st | Performance tuning and query optimization | sections 11.1 to 11.7 of chapter 11, | | | |
| April 8th | Distributed DBMS and Subqueries | *Chapter 12 12th Edition:* Coronel & Morris, section 8.2 of chapter 8 *13th Edition:* Coronel & Morris, section 7.8 of chapter 7 | SQL Lab 5 | Iteration 5 - Submit SQL for use cases 2a, 2b, 3a, and 3b, and define your own use cases for 5a and 5b, for your Term Project in Iteration 5. | 5 |

| Class Date | Topic | Reading | Assignment | Project | Quiz |
|---|---|---|---|---|---|
| April 15th | Advanced Topics | | | | |
| April 22nd | No class | *Monday classes held on Wednesday* | | | |
| April 29th | Project Presentations | | | Final Project Report Due | 6 |
| May 6th | Final Exam | | | | |