EECS3421 Introduction to Database Management Systems

Summer 2020

Course Website
https://www.eecs.yorku.ca/~papaggel/courses/eecs3421

Course Description
This course provides an introduction to the fundamental concepts of database management, including aspects of data models, database languages, and database design. At the end of this course, a student will be able to understand and apply the fundamental concepts required for the use and design of database management systems.

Instructor
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Office: LAS3050 (Lassonde building)

Class Hours
Lectures: Mon 10:00-13:00 and Fri 10:00-13:00 online (Zoom link provided separately)
Office hour: Mon 13:00PM online (Zoom link provided separately)

Class Attendance
Attendance of lectures is expected but not required.

Prerequisite Courses
LE/EECS 2030 3.00 or LE/EECS 1030 3.00;

Textbooks
- A First Course in Database Systems, by Jeffrey D. Ullman and Jennifer Widom, 2008 (3rd Edition).
- (Optional) Database Management Systems, by Raghu Ramakrishnan and Johannes Gehrke, 2003 (3rd Edition).

Communication
The following are the communication tools for the class.
- *Moodle*: https://moodle.yorku.ca/moodle/course/view.php?id=165756
- *Course website*: https://www.eecs.yorku.ca/~papaggel/courses/eecs3421/
  Most class materials are available on the course web site; be sure to check regularly. Most importantly, the page has a link to a discussion board (we are using Piazza).
- *QA Forum (Piazza)*: Instead of a traditional discussion board, we are using Piazza, a free Q&A platform. Piazza can get you fast, accurate response to your questions – but it only works if everyone participates! We will also use Piazza to post announcements and updates, so both the website and the discussion board are required reading. See below for Piazza signup and class links:
  - *Signup link*: https://piazza.com/yorku.ca/summer2020/eecs3421
  - *Class link*: https://piazza.com/yorku.ca/summer2020/eecs3421/home
  Note: You will need to sign up with your school email, ending in *yorku.ca*. If you do not have a school email address, please contact your instructor and request to be enrolled with your personal email.
- *Email*: Please use email for personal issues and the discussion board to ask general course-related questions. Include "eecs3421" in all email subject lines. An informative subject line like "eecs3421: Question related to X" really helps. I try to respond to email frequently. However, due to volume, it may take longer, especially near due dates.

Final Examination
A written final exam will be given (Exam period is Jun 24-26. Date TBD).

Tentative Grading Policy
The course grade will be earned in the following categories: 3 Assignments (45%); Midterm Test (20%); Final Exam (35%)
Note however that your mark in the final exam needs to be at least 40 out of 100 in order to pass the course.

To calculate your final grade in the course consider the following formula:
$$g = 0.45a + 0.2m + 0.35f, \text{ if } f >= 40; \quad g = f \text{ otherwise.}$$
where g = final grade, a = assignment grades, m = midterm test mark, f = final exam mark

Late Work Policies
The late policy is strict; no late assignments will be accepted. All assignments will be submitted electronically. Assignments are due at 11:59 p.m. on the due date. Assignments submitted after the due date will not be marked and will receive a grade of 0. If you are at risk of missing a deadline due to a busy week, you should hand in a working (and tested) version of a simpler program or assignment. In the event of an illness or other catastrophe, get proper documentation (e.g., medical certificate), and contact me (by email or in person) as soon as possible. Do not wait until the due date has passed. It is always easier to make alternate arrangements before the due date or test day.

Assignments are submitted electronically and will often be tested using an automated testing program; you must follow the **submission instructions exactly**. If you do not, you will most likely lose substantial marks on the assignment. If you find you have submitted the wrong file or omitted a file, please notify your instructor as soon as possible.

Remarking

If you feel an error was made in marking an assignment or test please submit a remark request using a remarking request form (found on the course website) explaining what your concern is **no later than three days** after the assignment (or test) has been returned back.

Academic Offenses

All of the work you submit must be done by you and your work must not be submitted by someone else. Plagiarism is academic fraud and is taken very seriously. The department uses software that compares programs for evidence of similar code. Please read the Rules and Regulations from the York University's Academic Integrity and the York University's Senate Policy on Academic Honesty documents.

Accessibility Needs

York University is committed to accessibility. If you require accommodations for a disability, or have any accessibility concerns about the course, the classroom or course materials, please contact York University's Counselling & Disability Services.

Tentative Schedule

A tentative schedule of topics to be covered appears below. This is subject and likely to change.

Week	Date	Topic
1	May 11	Introduction/The Relational Model
	May 15	Relational Algebra
2	May 18	No class – Victoria Day
	May 22	Relational Algebra
3	May 25	SQL Part A
	May 29	SQL Part B
4	Jun 1	SQL: DDL, DML, Views, Indexes
	Jun 5	Embedded SQL
5	Jun 8	**Midterm (tentative: first hour of class)** E/R Model & DB Design
	Jun 12	E/R Model & DB Design
6	Jun 15	Design Theory and Normalization
	Jun 19	NoSQL
7	Jun 22	Advanced Topics (SQL Security, Transactions, Recovery) Wrap Up
	Jun 24-26	Final Exams. Date TBD

Tentative Grading Scheme and Assignment Schedule

A tentative schedule of assignment topics appears below. This is subject and likely to change.

Component	Weight	Tentative Posting Date	Due Date	Topic
1st Assignment	15%	Sat, May 16	Sat, May 30, 11:59pm	Relational Algebra
2nd Assignment	15%	Sat, May 30	Sat, Jun 13, 11:59pm	Interactive and Embedded SQL
3rd Assignment	15%	Sat, Jun 13	Sat, Jun 20, 11:59pm	ER Model and Design & Normalization
Midterm Test	20%	-	Mon, Jun 8 at 10:00am	Topics up to and including SQL
Final Exam	35%	-	Jun 24-26 (TBD)	All Topics Covered