

# EECS3421 Introduction to Database Management Systems

Fall 2019

## Course Website

<https://www.eecs.yorku.ca/~papagel/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

Manos Papagelis

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Office: LAS3050 (Lassonde building)

## Class Hours

Lectures: Mon 19:00-21:00PM at LSB 105 (Life Sciences Building)

Tutorial: Mon 21:00-22:00PM at LSB 105 (Life Sciences Building)

Office hour: Mon 13:00PM at LAS 3050 (Lassonde Building, third floor)

## Class Attendance

Attendance of lectures and tutorials/labs 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 main communication tool for the class will be the course web site and a discussion board.

- *Website and Discussion Board:* 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).
- *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/fall2019/eecs3421>
  - *Class link:* <https://piazza.com/yorku.ca/fall2019/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 Dec 5-20. Date TBD).

## Grading Policy

The course grade will be earned in the following categories: 4 Assignments (40%); Midterm Test (20%); Final Exam (40%)

*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:*

$$g = 0.3a + 0.2m + 0.5f, \text{ if } f \geq 40; g = f \text{ otherwise.}$$

where *a* = assignment grades, *m* = midterm test mark, *f* = final exam mark

## Late Work Policies

The late policy is strict. All assignments will be submitted electronically. Assignments are due at 11:59 p.m. on the due date. Late assignments will be handled based on a system of "grace days", as follows: Each student begins the term with 3 *grace days*. One grace day is 24 hours. If an assignment is due at 11:59 p.m. on a Friday then an assignment handed in by 11:59 p.m. on Saturday uses one grace day; if handed in by 11:59 p.m. Sunday, it uses up 2 grace days; if handed in by 11:59 p.m. Monday, it uses up 3 grace days. The grace days are intended for use in emergencies (e.g., system failure or illness). Do not use all of them to buy an extension because of a busy week or you will be out of luck in a true emergency. Assignments submitted after the due date when all grace days have been used will receive a grade of 0.

If you are at risk of missing a deadline due to a busy week, rather than use your grace days you should hand in a working (and tested) version of a simpler program. 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 a week** 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	Week of	Topic
1	Sep 9	Introduction/The Relational Model <i>No Tutorial</i>
2	Sep 16	Relational Algebra <i>Tutorial 1: RA</i>
3	Sep 23	Relational Algebra <i>Tutorial 2: RA</i>
4	Sep 30	SQL Part A <i>Tutorial 3: RA</i>
5	Oct 7	SQL Part B <i>Tutorial 4: SQL</i>
6	Oct 14	No class – reading week
7	Oct 21	SQL: DDL, DML, Views, Indexes <i>Tutorial 5: SQL</i>
8	Oct 28	<b>Midterm (first hour of lecture)</b> Embedded SQL/ <i>Tutorial 6: Embedded SQL</i>
9	Nov 4	E/R Model & DB Design <i>No Tutorial</i>
10	Nov 11	E/R Model & DB Design <i>Tutorial 7: E/R Model &amp; DB Design</i>
11	Nov 18	Design Theory and Normalization <i>Tutorial 8: DB Design Theory</i>
12	Nov 25	NoSQL <i>No Tutorial</i>
13	Dec 2	Advanced Topics (SQL Security, Transactions, Recovery) Wrap Up <i>No Tutorial</i>
	Apr 5-20	Final Exams

### 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
1 <sup>st</sup> Assignment	10%	Fri, Sep 20	Fri, Oct 11, 11:59pm	Relational Algebra
2 <sup>nd</sup> Assignment	10%	Fri, Oct 18	Fri, Nov 8, 11:59pm	Interactive and Embedded SQL
3 <sup>rd</sup> Assignment	10%	Fri, Nov 8	Fri, Nov 29, 11:59pm	ER Model and Design & Normalization
Midterm Test	20%	-	Mon, Oct 28, 19:00 – 20:00	Topics up to and including SQL
Final Exam	50%	-	Dec 5-20 (TBD)	All Topics Covered