

**University of Ottawa**  
**School of Electrical Engineering and Computer Science**  
**CSI2132 – Database I**  
**Winter 2016**

**Formal Course Description**

Fundamental database concepts. Entity-Relationship modeling. Relational algebra and relational calculus. Relational databases. Database definition and manipulation using SQL. Embedded SQL. Functional dependencies and normalization. Introduction to physical database design. Design and implementation of a database application in a team project.

**Professor's details**

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**Prescribed Book**

Database Management Systems (3<sup>rd</sup> Edition)  
R. Ramakrishnan and J. Gehrke McGraw Hill, 2003  
The book has a great website, see [www.cs.wisc.edu/~dbbook](http://www.cs.wisc.edu/~dbbook)

**Other good texts are:**

Fundamentals of Database Systems,  
R Elmasri and SB Navathe, 6<sup>th</sup> Edition,  
Addison-Wesley, 2011  
The book is also available in a digital version, see [www.cafescribe.com](http://www.cafescribe.com)

Database Systems: A Practical Approach to Design, Implementation, and Management (6<sup>th</sup> Edition)  
Thomas Connolly and Carolyn Begg  
2014

**Mark Allocation**

You final grade will be determined as follows:

<b>Assignments (3)</b>	<b>15</b>
<b>Team project</b>	<b>20</b>
<b>Mid Term</b>	<b>25</b>
<b>Final Examination</b>	<b>40</b>

All assignments should be submitted using Blackboard Learn.

## Course outline

Note that all the course content will be made available through Blackboard Learn.

Week of	Topic	Chapter
11 Jan	Introduction	Chapter 1
18 Jan	EER modeling	Chapter 2
25 Jan	The relational model	Chapter 3
1 Feb	The relational model	Chapter 3
8 Feb	Structured Query Language	Chapter 5
15 Feb	<b>Reading week; no Classes this week</b>	All up to now
22 Feb	Midterm on <b>MONDAY Feb 22<sup>th</sup>, at 14h30</b> Structured Query Language	All up to now
29 Feb	Schema refinement and normal forms	Chapter 19; notes
7 March	Schema refinement and normal forms (exercises) Midterm memorandum	Chapter 19; notes
14 March	Storage and indexing	Chapters 8 – 13
21 March	Storage and indexing <b>Easter Break: 25 - 28 March</b>	Chapters 8 - 13
28 March	Relational algebra and Relational calculus	Chapter 4
4 April	Relational algebra and Relational calculus	Chapter 4
11 April	Revision; Classes end on April 12 <sup>th</sup>	All

### Some important information

- Note that you are required to obtain a combined mark of at least 50% for the midterm and final examination, in order to pass this course.
- As per academic regulations, class attendance is mandatory. Also, as per academic regulations, students who do not attend 80% of the class are not allowed to write the final examinations.
- All components of the course (i.e. the team project, assignments, etc.) must be fulfilled otherwise students may receive an INC as a final mark (equivalent to an F). This is also valid for a student who is taking the course for the second time.
- For the team project (completed in a group of three students) we will be using PostgreSQL.

For more information about academic fraud regulations, please visit the following University of Ottawa website: [www.uottawa.ca/academic/info/regist/crs/0305/home\\_5\\_ENG.htm](http://www.uottawa.ca/academic/info/regist/crs/0305/home_5_ENG.htm))

Please take note that although the academic fraud regulations webpage dates back to 2003-2005, the regulations have remained the same and still apply.

## Tutorial Schedule

The aim of the tutorial sessions is to provide you with the knowledge to master the theory component of this course. It is therefore very important that you attend.

Week of	Topic
11 Jan	No formal DGD yet
18 Jan	Introduction
25 Jan	EER modeling
1 Feb	The Relational Model
8 Feb	Midterm Preparation (A look at Old Midterms)
15 Feb	<b>Reading week; no Classes this week</b>
22 Feb	<b>Midterm on Monday February 22th, at 14h30</b>
29 Feb	Structured Query Language
7 March	Schema refinement and normal forms
14 March	Schema refinement and normal forms
21 March	Storage and indexing
28 March	<b>Easter break: no DGD this week</b>
4 April	Files and Disks
11 April	Revision of Old Exam

## Labs Winter

See the School's Lab Information webpage on how to use PostgreSQL:  
(<http://www.site.uottawa.ca/local/labinfo/software/postgresql.html>)

Date	Topic
11 Jan	No formal lab yet
18 Jan	PostgreSQL and PGAdmin Installation
25 Jan	Basic SQL programming
1 Feb	Advanced SQL programming
8 Feb	Advanced SQL programming
15 Feb	<b>Reading Week; no Classes this week</b>
22 Feb	<b>Midterm Week: No lab this week</b>
29 Feb	Database programming
7 March	Database Programming
14 March	Web database programming
21 March	Web database programming
28 March	<b>Easter break: no LAB</b>
4 April	No formal lab; TA available for questions about project
11 April	Demonstrate your project to the TA on Monday April 11 <sup>th</sup> , during the scheduled lab