uOttawa

School of electrical Engineering and Computer Science (EECS)	École de science informatique et de génie électrique (SIGE)

CSI 2132 B Databases I (3, 1.5, 1.5)
Winter 2023

Instructor	Prof. Wail Mardini
Email	wmardini@uottawa.ca
Office hours	Wednesday 11:30 am to 12:30 pm @ SITE 5000G

1 – 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.

2 – PREREQUISITES

CSI 2110 Data Structures and Algorithms

3 – LECTURE/TUTORIALS/LABS SCHEDULE

Lectures:

Wednesday   1:00 pm - 2:20 pm @ Room: FSS 2005

Friday   11:30 am - 12:50 pm @ Room: FSS 2005

Labs:

Section	Day and time	location	TA name
CSI 2132-B01	Mo 2:30PM - 3:50PM	161 Louis Pasteur (CBY) B02	Nihal
CSI 2132-B02	Mo 2:30PM - 3:50PM	800 King Edward (STE) 0130	Ravi Kiran
CSI 2132-B03	Mo 5:30PM - 6:50PM	800 King Edward (STE) 2060	Anushree
CSI 2132-B07	Mo 2:30PM - 3:50PM	800 King Edward (STE) 0131	Tejas

Tutorials:

Section	Day and time	location	TA name
CSI 2132-B05	Mo 4:00PM - 5:20PM	57 Louis Pasteur (FTX) 147B	Aishwarya
CSI 2132-B06	Mo 4:00PM - 5:20PM	800 King Edward (STE) H0104	Nihal

4-TEACHING ASSISTANTS

Nihal Antony	nanto045@uottawa.ca
Deepank Kartikey	dkart060@uottawa.ca
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Aishwarya Manapuram	amana022@uottawa.ca

5 – TEXTBOOK AND LECTURE NOTES

The following book is required as a main textbook for the course.
Title: ISE Database System Concepts, 7th Edition
ISBN: 1260084507 · 9781260084504
By Abraham Silberschatz, Henry F. Korth, S. Sudarshan
© 2020 | Published: February 28, 2019
Website: https://www.db-book.com/

6 – ASSIGNEMENTS/PROJECT

Assignments: There will be 3 assignments during the semester. Each assignment is an **individual** work
Project: There will be a course project done as **group** of 2-3 students.

7 – EXAMS

Midterm Exam: This exam is a closed book exam and will be conducted on paper during Week 6 of the course with questions on topics studied in the first part of the course.

Final Exam: This exam will be closed book scheduled by the university.

8 – GRADING SCHEME

Project	25%
Three Assignments	15%
Mid-term Exam	15%
Final Exam	45%

In order to pass the course, you should achieve at least 50% in total grades and at least 30% or more in the exams (midterm and final exams).

9 – ATTENDANCE

- *Attendance at lectures is mandatory. As per academic regulations, students who do not attend 80% of these class activities may not be allowed to write the final examination.*
- *Attendance on labs and tutorials is optional but highly encouraged*

10 – TOPICS AND TENTATIVE SCHEDULE

Lectures schedule:

	Topics Covered*	
Date (Week of)	**Topics**	**Chapters in Text**
January 9	Introduction to databases and data management	Chapter 1
January 16	Entity-Relationship model (part 1)	Chapter 6 (sections 1-6)
January 23	Relational model	Chapter 2 (sections 1-5)
January 30	Introduction to SQL	Chapter 3
February 6	Intermediate SQL	Chapter 4
February 13	Review + Midterm	
February 20	Study break	
February 27	Advanced SQL	Chapter 5
March 6	Entity-Relationship model (part 2)	Chapter 6 (sections 7 -11)
March 13	Relational algebra	Chapter 2 (section 6)
March 20	Normalization: Functional Dependencies	Chapter 7
March 27	Physical design and storage	Selected sections /chapter 12

	Indexing and hashing: including B+trees, B-trees, extensible hashing and linear hashing	Selected sections /chapter 12-14 + extra resources
April 3	Indexing and hashing: including B+trees, B-trees, extensible hashing and linear hashing	Selected sections /chapter 12-14 + extra resources

*Subject to changes.

Tutorials schedule:

	Topics Covered*
Date (Week of)	**Topics**
January 16	Introduction to databases
January 23	Entity-Relationship model examples
January 30	Relational model examples
February 6	Introduction to SQL
February 13	midterm practice
February 20	Study break
February 27	Intermediate SQL
March 6	Advanced SQL
March 13	Entity-Relationship model
March 20	Entity-Relationship model
March 27	Normalization: Functional Dependencies
April 3	Final practice

*Subject to changes.

Labs schedule:

	Topics Covered*
Date (Week of)	**Topics**
January 16	Lab 1: Software installation (MySQL)
January 23	Lab 2: Basic SQL statements
January 30	Lab 3: SQL programming 1
February 6	Lab 4: SQL programming 2
February 13	Lab 5: SQL programming 3
February 20	Study break
February 27	
March 6	Lab 6: Assertions Triggers
March 13	Lab 7: Database connectivity
March 20	Lab 8: Web database programming
March 27	Lab 9: Web database programming
April 3	Lab 10: Web database programming

*Subject to changes.

11 – REMINDERS

- All components of the course (i.e., laboratory reports, 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.*

- Information on academic fraud can be found at the following links:

  https://www2.uottawa.ca/about-us/policies-regulations/academic-regulation-i-14-academic-fraud

  Students are to become familiar with the Faculty of Engineering rules and regulations; you may refer to them if you happen to miss an exam. These are within the University of Ottawa's regulations sections 9.4, 9.5, 9.6, 14.2 and 14.3, which define conduct during an examination, academic fraud, the sanctions and the decision and appeal processes:

  https://www2.uottawa.ca/about-us/policies-regulations

  https://www2.uottawa.ca/current-students/academic-integrity

- Important dates and deadlines for the academic year can be found at the following link: https://www.uottawa.ca/important-academic-dates-and-deadlines/.

- Several resources from the faculty of engineering can be found at the following link: https://www.uottawa.ca/en/students

- If necessary, the instructor will contact students through their official University of Ottawa's e-mail address (username@uottawa.ca). If you are using a personal e-mail address, please go to the university mail management web site to set a forwarding address (https://web.uottawa.ca/cgi-bin/mailadmin/main.pl). You are responsible for ensuring you are receiving official course information in an efficient and timely manner.

12-PERSONNAL ETHICS AGREEMENT CONCERNING UNIVERSITY ASSIGNMENTS/PROJECTS

See following pages

Personal Ethics Agreement Concerning University Assignments

Individual Assignment

I submit this assignment and attest that I have applied all the appropriate rules of quotation and referencing in use at the University of Ottawa, https://www2.uottawa.ca/current-students/academic-integrity
I attest that this work conforms to the regulations on academic integrity of the University of Ottawa.

_____   _____
Name, Capital letters   Student number

_____   _____
Signature   Date

Personal Ethics Agreement Concerning University Assignments

Group Project

We submit this assignment and attest that we have applied all the appropriate rules of quotation and referencing in use at the University of Ottawa https://www2.uottawa.ca/current-students/academic-integrity. We attest that this work conforms to the regulations on academic integrity of the University of Ottawa. We understand that this assignment will not be accepted or graded if it is submitted without the signatures of all group members.

_____   _____

Name, Capital letters   Student number

_____   _____

Signature   Date

_____   _____

Name, Capital letters   Student number

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Signature   Date

_____   _____

Name, Capital letters   Student number

_____   _____

Signature   Date

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Name, Capital letters   Student number

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Signature   Date