CIS*3530 Database Systems and Concepts

Fall 2021

UNIVERSITY of GUELPH

School of Computer Science

Instructional Support

Section 01: LEC MWF 9:30am – 10:20am Virtual	
Instructor:	Ritu Chaturvedi
Office:	Reynolds 2211
Email:	cis3530@socs.uoguelph.ca
Office hours:	Wednesdays 11 – 1pm
Teaching Assistants:	
TBA	

Calendar Description

This course is a study of data organization and data management principles with the perspective of analyzing applications suitable for implementation using a DBMS. This will include an analysis of several data base models, query specification methods, and query processing techniques. Overview of several related issues including concurrency control, security, integrity and recovery. Students will demonstrate concepts through assignments.

Course Objectives and Topics

This course is designed to provide the fundamental concepts of conventional database systems, including database models and modeling, relational database theory, database design methodology, query processing, and concurrency control. Students will also learn skills of system analysis, database design and database programming. Topics may include

- Entity-Relationship data modeling
- The relational database model
- Relational algebra and calculus
- Advanced components in SQL
- Relational database
- Transaction management and concurrency control
- Query optimization
- Database security and recovery

Textbook

- Ramez Elmasri, Shamkant B. Navathe: Fundamentals of Database Systems, Pearson, 6th Edition, 2010.

References

- C. J. Date: An Introduction to Database Systems (8th Edition), Addison-Wesley Publishing Company, 2003.
- H. Garcia-Molina, J. D. Ullman, and J. Widom, Database Systems (2nd Edition) Prentice Hall, 2009.

Course Web Page URL: moodle.socs.uoguelph.ca/

Course credit and prerequisites:
- Course credit: 0.5
- Prerequisites: CIS*2520

Important Dates:
- *Thursday* September 9th: First day of class
- *Monday*, October 11: Holiday-NO CLASSES SCHEDULED -- classes rescheduled to Friday, December 3
- *Tuesday*, October 12: Fall Study Break Day - NO CLASSES SCHEDULED -- classes rescheduled to Thursday, December 2
- *Thursday* December 3rd: Last day of class

Assessment
- Three assignments: 10% each = 30%
- Four graded labs: 4% each = 16%
- Ten graded weekly worksheets: 1% each = 9% (will drop the lowest grade)
- Three quizzes: 5% + 5% + 5% = 15%
- Final examination: 30%

Tentative Schedule:

Week	Topic	Labs (Due Fridays)	Quizzes (Due Sundays)	Assignments (Due Wednesdays)	Worksheets (Due Saturdays)
Week 0 (Sept 9th)	Introduction to the course				
Week 1 (Sept 13th)	Introduction, Relational Model				W1
Week 2 (Sept 20th)	Relational Algebra				W2
Week 3 (Sept 27th)	SQL DML	L1	Q1		W3
Week 4 (Oct 4th)	SQL DML, Constraints in SQL	L2			W4
Week 5 (Oct 11th)	No Class on Oct 11th / Design I (ER Modeling)	L3		A1	W5 (Optional and Ungraded)
Week 6 (Oct 18th)	Design I (ER Modeling)				W6
Week 7 (Oct 25th)	Design II (Normalization)		Q2		W7
Week 8 (Nov 1st)	Design II (Normalization), SQL DDL				W8
Week 9 (Nov 8th)	Stored procedures, triggers			A2	W9
Week 10 (Nov 15th)	Transaction Management	L4			W10
Week 11 (Nov 22nd)	NoSQL		Q3		W11
Week 12 (Nov 29th)	Final Exam preparation			A3	

Requirement to pass the course

To pass the course you need to:
- Achieve an overall grade of 50% or above
- Pass the Exams component (50% or above on the weighted average of the quizzes and final exam)
    - You may fail any of the quizzes or final exam as long as your weighted average of all quizzes and final exam remains above 50%.

If you do not pass the Exams component:
- Your final grade will be equal to the weighted sum of the weekly worksheets, quizzes and final exam.

Course Grading Policies

Missed Labs: If you miss a lab submission due to **documented** grounds for granting academic or religious accommodation, the weight of the missed assessment will be added to the final exam. There will be no makeup labs. Note that lab attendance is optional – there is no grade for attending a lab, lab grades will be based on submission only.

Late Assignments: Late assignments will not be accepted. There are no makeup assignments. Assignments submitted after the due date are assigned a grade of 0.

Regrades: Regrading can be done in 2 steps:

Step 1: Requests for regrades of assignments 1 and 2 and lab exams must be emailed to cis3530@socs.uoguelph.ca within 5 business days of receiving your mark. The request must have the word **regrade** and the name of the assignment or exam in the subject line and must contain a detailed description of why you feel the assignment should be regraded.

Step 2: You will then book an appointment for your assignment/exam to be regraded in person. It is important to note that your assignment/exam will not be regraded unless you meet a TA in-person.

Note: There is no regrade option for Assignment 3.

Note: It is important to note that a regrade is not a chance to redo the assignment. The original submission will be graded.

Late Worksheets: Late worksheets will not be accepted. There are no makeup worksheets. There are 10 graded worksheets – the lowest grade will be dropped.

Missed Assessments: If you are unable to meet an in-course requirement due to medical, psychological, or compassionate reasons, please make an appointment to meet your course instructor. Please see below for specific details and consult the undergraduate calendar for information on regulations and procedures for Academic Consideration:
http://www.uoguelph.ca/registrar/calendars/undergraduate/current/c08/c08-ac.shtml

Accommodation of Religious Obligations: If you are unable to meet an in-course requirement due to religious obligations, please email the course email address **within two weeks of the start of the semester** to make alternate arrangements. See the undergraduate calendar for information on regulations and procedures for Academic Accommodation of Religious Obligations:
http://www.uoguelph.ca/registrar/calendars/undergraduate/current/c08/c08-accomrelig.shtml

Communication & Email Policy

Please use lectures, lab sessions, and the discussion forum as your main opportunities to ask questions about the course. Questions that are specific to your particular situation may be emailed to cis3530@socs.uoguelph.ca and will be answered by one of the instructional team. Extremely private communication should be conducted in person by making an appointment with the course instructor.

Major announcements will be posted to the course website and the discussion forums. **It is your responsibility to check the course website regularly.** As per university regulations, all students are required to check their <mail.uoguelph.ca> e- mail account regularly: e-mail is the official route of communication between the University and its students.

Academic Integrity

The University of Guelph is committed to upholding the highest standards of academic integrity and it is the responsibility of all members of the University community faculty, staff, and students to be aware of what constitutes academic misconduct and to do as much as possible to prevent academic offences from occurring. University of Guelph students have the responsibility of abiding by the University's policy on academic misconduct regardless of their location of study; faculty, staff and students have the responsibility of supporting an environment that discourages misconduct. All students who take a SOCS course must pass the **Academic Integrity Self Test**.

For educational purposes, instructors impose conditions on assignments that may limit students' permission to collaborate with others or to utilize external sources (including, but not limited to, software, data, images, text, etc.). Any permitted utilization must be done with proper references.   Aiding and abetting is a punishable offence; students must be careful not to help others commit offences by giving out solutions or providing to access computer accounts. Instructors may use automated tools to detect possible cases of academic misconduct.

Please note: Whether or not a student intended to commit academic misconduct is not relevant for a finding of guilt. Hurried or careless submission of assignments does not excuse students from responsibility for verifying the academic integrity of their work before submitting it. Students who are in any doubt as to whether an action on their part could be construed as an academic offence should consult with a faculty member.

The Academic Misconduct Policy is detailed in the Undergraduate Calendar:
http://www.uoguelph.ca/registrar/calendars/undergraduate/current/c08/c08-amisconduct.shtml

The SOCS Academic Integrity Unit:
http://moodle.socs.uoguelph.ca/course/view.php?id=2 Login with your central login credentials.

Accessibility

The University of Guelph is committed to creating a barrier-free environment. Providing services for students is a shared responsibility among students, faculty and administrators. This relationship is based on respect of individual rights, the dignity of the individual and the University community's shared commitment to an open and supportive learning environment. Students requiring service or accommodation, whether due to an identified, ongoing disability, or for a short-term disability should contact Student Accessibility Services (SAS) as soon as possible.

For more information, contact SAS at 519-824-4120 ext. 56208 or email csd@uoguelph.ca or see the website:
http://www.uoguelph.ca/csd/

Copies of out-of-class assignments

Keep paper and/or other reliable back-up copies of all out-of-class assignments: you may be asked to resubmit work at any time.