

CSC370: Database Systems

Course Dates

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| CRN(s): | Section A01 CRN: 10874 Section A02 CRN: 10875 |
| Term: | 2023 |
| Course Start: | 2023-09-06 |
| Course End: | 2023-12-20 |
| Withdrawal with 100% reduction of tuition fees: | 2023-09-19 |
| Withdrawal with 50% reduction of tuition fees: | 2023-10-10 |
| Last day for withdrawal (no fees returned): | 2023-10-31 |

Scheduled Meeting Times (M=Mon, T=Tue, W=Wed, R=Thu, F=Fri)

| Section: | Location: | Classes Start: | Classes End: | Days of week: | Hours of day: | Instructor: |
|----------|-----------|----------------|--------------|---------------|---------------|---------------|
| A01 | RSN 131 | 2023-09-06 | 2023-12-04 | MR | 13:00-14:20 | Daniel German |
| A02 | RSN 131 | 2023-09-06 | 2023-12-04 | MR | 13:00-14:20 | Daniel German |

Instructor(s)

Name: **Daniel German**
 Office: ECS 560
 Phone: (250) 472-5790
 Email: dmg at uvic dot ca
 Office Hours: TBD

Course Overview

The objective of the course is to present an introduction to database management systems (DBMS), with an emphasis on how to organize, maintain and retrieve--efficiently, and effectively--information from a DBMS.

Course expectations

- Before each lecture, students will be expected to prepare for the topic of the lecture.
- Students are expected to attend all lectures.
- Unless explicitly stated, all work is expected to be done individually.

Strict monitoring of academic integrity will be performed in this course for any work submitted for marks. See course component descriptions and Course Policies and Guidelines below for details on academic integrity expectations. Substantiated academic integrity violations will be referred to the Department's Academic Integrity Committee which will determine penalty and ensure a record of the violation is kept with the university.

Topics

The major topics to cover are:

- Database design
- Relational Algebra and Calculus
- SQL
- User defined functions and stored procedures
- Transaction Management
- Security
- Query evaluation

Course Objectives And Learning Outcomes

- Database design: how can we describe the world in terms of data?
- Data analysis: how can we answer questions about the world in terms of questions on such data?
- Concurrency and robustness: how does the DBMS allow multiple users to query and modify the same data? What happens when there is a system failure?
- Efficiency and scalability: how does the DBMS store large amounts of data and process them efficiently?

Textbooks

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|------------------|--|
| Required: | Database Systems: The Complete Book (2nd Edition) |
| | Hector Garcia-Molina, Jeffrey D. Ullman and Jennifer Widom |
| | ISBN-10: 0131873253, ISBN-13: 978-0131873254 |
| | 1st edition is acceptable as discussed in class |

Assignments

There will be 3 assignments.

- All assignments are worth the same weight, for a total of 3% of the course mark.

Each assignment will be posted at least 14 days before it is due (see below).

Exams

There will be two midterms and a final exam.

The exams will take place as follows:

| Exam | Date | Time |
|-----------|-----------------------------|---------------|
| Midterm 1 | Oct 5 | 13:00 - 14:20 |
| Midterm 2 | Nov 6 | 13:00 - 14:20 |
| Final | Scheduled by the university | |

See below for grading scheme.

All examinations will be:

1. in person,
2. closed book,
3. without the aid of electronic devices (the instructor might provide calculators to all students in one or more examinations).

For students who have a **valid concession** that allows them to miss **one** of the midterms:

1. they will not write such midterm,
2. the weight of the final exam will be adjusted to account for not writing such midterm (see below under grading).

Students who have a valid concession to miss both midterms should apply to withdraw from the course without academic penalty. **These students will not be granted a concession to rewrite any midterm.**

Term Schedule and Grading Scheme

The grade of this course will be calculated as follows:

| Coursework | Weight | Due Date |
|--------------|--------|-----------------------------|
| Assignment 1 | 1% | Sept 28 |
| Assignment 2 | 1% | Oct 26 |
| Assignment 3 | 1% | Nov 23 |
| Midterm 1 | 30% | Oct 5 |
| Midterm 2 | 30% | Nov 6 |
| Final | 37% | Scheduled by the university |

To pass the course **the student must:**

1. receive a **passing grade** in the final and,
2. receive a **passing grade** in at least one of the midterms.

For students who have a **valid concession** that allows them to miss one of the midterms, the final exam will replace such midterm and its weight will be 67% of the total grade.

For courses which have final exams, students should not make final plans for travel or employment during the exam period since special arrangements will not be made for examinations that may conflict with such plans.

Copyright Statement

All course content and materials are made available by instructors for educational purposes and for the exclusive use of students registered in their class. The material is protected under copyright law, even if not marked with a ©. Any further use or distribution of materials to others requires the written permission of the instructor, except under fair dealing or another exception in the Copyright Act. Violations may result in disciplinary action under the Resolution of Non-Academic Misconduct Allegations policy (AC1300).

Grading System

The University of Victoria follows a percentage grading system in which the instructor will submit grades in percentages. The University will use the following Senate approved standardized grading scale to assign letter grades. Both the percentage mark and the letter grade will be recorded on the academic record and transcripts.

| F | D | C | C+ | B- | B | B+ | A- | A | A+ |
|------|-------|-------|-------|-------|-------|-------|-------|-------|--------|
| 0-49 | 50-59 | 60-64 | 65-69 | 70-72 | 73-76 | 77-79 | 80-84 | 85-89 | 90-100 |

| Grades | Description |
|-----------|---|
| A+, A, A- | Exceptional, outstanding or excellent performance. Normally achieved by a minority of students. These grades indicate a student who is <i>self-initiating</i> , <i>exceeds expectation</i> and has an <i>insightful</i> grasp of the subject matter. |
| B+, B, B- | Very good, good or solid performance. Normally achieved by the largest number of students. These grades indicate a <i>good</i> grasp of the subject matter or <i>excellent grasp in one area balanced with satisfactory grasp in the other areas</i> . |
| C+, C | Satisfactory, or minimally satisfactory . These grades indicate a <i>satisfactory performance and knowledge</i> of the subject matter. |
| D | Marginal Performance . A student receiving this grade demonstrated a <i>superficial grasp</i> of the subject matter. |
| F | Unsatisfactory performance . Wrote final examination and completed course requirements; no supplemental. |

Posting of Grades

Typically marks for assignments, examinations, and provisional final grades, are made available through a Learning Management System (LMS) like Brightspace, where each student will be able to view only their own grades. Sometimes numerical marks/grades may be posted publicly to the entire class. In that case, full student numbers or names will not be included with the posted information.

Course Experience Survey (CES)

I value your feedback on this course. Towards the end of term you will have the opportunity to complete a confidential course experience survey (CES) regarding your learning experience. The survey is vital to providing feedback to me regarding the course and my teaching, as well as to help the department improve the overall program for students in the future. When it is time for you to complete the survey, you will receive an email inviting you to do so. If you do not receive an email invitation, you can go directly to the [CES site](#)

You will need to use your UVic NetLink ID to access the survey, which can be done on your laptop, tablet or mobile device. I will remind you closer to the time, but please be thinking about this important activity, especially the following three questions, during the course.

- What strengths did your instructor demonstrate that helped you learn in this course?
- Please provide specific suggestions as to how the instructor could have helped you learn more effectively.
- Please provide specific suggestions as to how this course could be improved.

Csc Student Groups

The Computer Science Course Union (<https://onlineacademiccommunity.uvic.ca/cscu/>) serves all students who are either in a computer science program or taking a class in computer science. Please sign yourself up on their mailing list if you would like to be informed about their social events and services.

The Engineering Students' Society (ESS) serves all students registered in an Engineering degree program, including Software Engineering (BSEng). For information on ESS activities, events and services navigate to <http://www.engr.uvic.ca/~ess>.

Course Policies And Guidelines

Late Assignments: No late assignments will be accepted unless prior arrangements have been made with the instructor **at least 48 hours before** the assignment due date. **Coursework Mark Appeals:** All marks must be appealed **within 7 days** of the mark being posted. **Attendance:** We expect students attend all lectures and labs. It is entirely the students' responsibility to recover any information or announcements presented in lectures from which they were absent. **Electronic devices in labs and lectures:** No unauthorized *audio* or *video* recording of lectures is permitted. **Electronic devices in midterms and exams:** Calculators are only permitted for examinations and tests if explicitly authorized and the type of calculator permitted may be restricted. No other electronic devices (e.g. cell phones, pagers, PDA, etc.) may be used during examinations or tests *unless explicitly authorized*. **Plagiarism:** Submitted work may be checked using plagiarism detection software. Cheating, plagiarism and other forms of academic fraud are taken very seriously by both the University and the Department. You should consult the link given below for the UVic policy on academic integrity. Note that the university policy includes the statement that "A largely or fully plagiarized assignment should result in a grade of F for the course."

The Faculty of Engineering and Computer Science Standards for Professional Behaviour are at <https://www.uvic.ca/ecs/assets/docs/student-forms/professional-behaviour.pdf> U.Vic guidelines and policy concerning fraud and academic integrity are at <http://web.uvic.ca/calendar/undergrad/info/regulations/academic-integrity.html> **U. Vic Privacy Policy:** If any student has concerns about their private information being stored or accessed outside of Canada, they are required to inform the course instructor about their concerns before the end of second week of classes.

Equality

This course aims to provide equal opportunities and access for all students to enjoy the benefits and privileges of the class and its curriculum and to meet the syllabus requirements. Reasonable and appropriate accommodation will be made available to students with documented disabilities (physical, mental, learning) in order to give them the opportunity to successfully meet the essential requirements of the course. The accommodation will not alter academic standards or learning outcomes, although the student may be allowed to demonstrate knowledge and skills in a different way. It is not necessary for you to reveal your disability and/or confidential medical information to the course instructor. If you believe that you may require accommodation, the course instructor can provide you with information about confidential resources on campus that can assist you in arranging for appropriate accommodation. Alternatively, you may want to contact the [Centre for Accessible Learning](#) located in the Campus Services Building.

The University of Victoria is committed to promoting, providing, and protecting a positive, and supportive and safe learning and working environment for all its members.

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