



# THE UNIVERSITY OF WINNIPEG

## APPLIED COMPUTER SCIENCE

**Course Number:** ACS-2814-001, 070L, 071L  
**Course Name:** Applications of Database Systems  
**Course Webpage:** <https://nexus.uwinnipeg.ca/d2l/home/61761>

### Instructor Information

**Instructor:** Jesse Harder  
**E-mail:** [je.harder@uwinnipeg.ca](mailto:je.harder@uwinnipeg.ca)  
**Office Hours:** Wednesdays 5:30-6:30 pm Zoom  
**Class meeting time:** Tuesdays/Thursdays 4:00-6:00 pm 3D01  
**Lab time:** 070L Tuesdays 2:15-3:45 pm 3D03  
071L Thursdays 2:15-3:45 pm 3D03

### Important Dates

1. First Class: Tuesday, May 07, 2024
2. First Lab: 070L Tuesday, May 07, 2024  
071L Thursday, May 09, 2024
3. Midterm Test: Thursday, June 06, 2024
4. Reading Break (No classes or labs): Tuesday, June 04, 2024
5. Final Withdrawal Date w/o academic penalty\*: Wednesday, June 19, 2024
6. Last Class: Tuesday, July 02, 2024
7. Last Lab: 070L Tuesday, July 02, 2024  
071L Thursday, June 27, 2024
8. Final Exam (Comprehensive): TBD
9. University Closures (no classes or labs):
  - a. Victoria Day Monday, May 20, 2024
  - b. Canada Friday Monday, July 01, 2024

\*A minimum of 20% of the work on which the final grade is based will be evaluated and available to the student before the voluntary withdrawal date.

## **Course Objectives / Learning Outcomes**

The course introduces relational databases including their use, design, development and programming using Microsoft Access and various database design tools. Examples are taken from a number of different subject areas. Specifically, the course:

- Focuses on introductory issues of creating tables, indexes, relationships, forms, reports, queries, structured query language (SQL), importing/exporting data.
- Introduces database design.
- Introduces normalization and de-normalization of databases.
- Emphasizes hands-on experience through classroom lectures, weekly labs/quizzes, and assignments.

## **Evaluation Criteria**

1. Labs (8%)
  - Weekly labs, worth 1% each
  - Each lab is due at midnight on the day of the lab
  - No late lab submissions will be accepted
2. Assignments (17%)
  - Three assignments, worth 5%, 6%, and 6%
  - Individual due dates will be posted on Nexus
  - No late assignment submissions will be accepted
3. Midterm Test (25%)
  - During the regular class time (see Important Dates)
4. Final Exam (50%)
  - Cumulative
  - Date and location to be announced

### **Course Tools:**

The database management system used for this course is Microsoft Access. The workstations in ACS lab 3C13 have Microsoft Access installed. Students will need access to a computer with Microsoft Access outside of class and lab times. Database design tools will also be available in the labs.

*Students should contact the instructor as soon as possible* if extenuating circumstances require missing a lab, assignment, test or examination. A medical certificate from a practicing physician may be required before any adjustments are considered.

## **Course Delivery**

The lectures and the labs will be delivered in person on campus. All course material including lecture notes, slides and assignment/lab details will be available on Nexus. Labs and assignments are to be submitted via Nexus. Submission guidelines will be specified for each lab and assignment. Works that do not follow submission guidelines will not be accepted. Students are responsible for backing up and protecting their lab and assignment work.

## **Test / Exam Requirements**

- Photo ID is required for the exam and midterm.
- The use of computers, calculators, phones, or other electronic devices is not permitted during exams.
- Midterm and final exams are closed book.

Students with documented disabilities, temporary or chronic medical conditions, requiring academic accommodations for tests/exams or during lectures/laboratories are encouraged to contact Accessibility Services (AS) at 204.786.9771 or <https://www.uwinnipeg.ca/accessibility-services/> to discuss appropriate options. All information about a student's disability or medical condition remains confidential.

Students may choose not to attend classes or write examinations on holy days of their religion, but they must notify their instructors at least two weeks in advance. Instructors will then provide opportunity for students to make up work examinations without penalty. A list of religious holidays can be found in the 2023-2024 Undergraduate Academic Calendar online at <http://uwinnipeg.ca/academics/calendar/docs/important-notes.pdf>

## **Final Letter Grade Assignment**

Historically, numerical percentages have been converted to letter grades using the following scale. However, instructors can deviate from these values based on pedagogical nuances of a particular class, and final grades are subject to approval by the Department Review Committee.

A+	90 – 100%	B+	75 – 79%	C	60 – 64%
A	85 – 89 %	B	70 – 74%	D	50 – 59%
A-	80 – 84%	C+	65 – 69%	F	below 50%

## **Required Text Book / Reading List**

- Ron McFadyen, *Relational Databases and Microsoft Access, Version 4.0*, University of Winnipeg, 2021.
  - Available at [www.acs.uwinnipeg.ca/rmcfadyen/CreativeCommons](http://www.acs.uwinnipeg.ca/rmcfadyen/CreativeCommons)
- Class Notes will be available on Nexus

## **Prerequisite Information**

- There are no prerequisites, however there is a restriction that this course cannot be held with the former ACS-2914.
- ACS-2814L (lab) must be taken concurrently.

## **Regulations, Policies, and Academic Integrity**

Academic dishonesty is a very serious offense and will be dealt in accordance with the University's policies.

*Avoiding Academic Misconduct:* Students are encouraged to familiarize themselves with the Academic Regulations and Policies found in the University Academic Calendar at:

<https://uwinnipeg.ca/academics/calendar/docs/regulationsandpolicies.pdf>

Particular attention should be given to subsections 8 (Student Discipline), 9 (Senate Appeals) and 10 (Grade Appeals). Please note, in particular, the subsection of Student Discipline pertaining to plagiarism and other forms of cheating.

Detailed information can be found at the following:

- Academic Misconduct Policy and Procedures:  
<https://www.uwinnipeg.ca/policies/docs/policies/academic-misconduct-policy.pdf> and  
<https://www.uwinnipeg.ca/policies/docs/procedures/academic-misconduct-procedures.pdf>
- About Academic Integrity and Misconduct, Resources and FAQs:  
<https://library.uwinnipeg.ca/use-the-library/help-with-research/academic-integrity.html>

Uploading essays and other assignments to essay vendor or trader sites (filesharing sites that are known providers of essays for use by others who submit them to instructors as their own work) involves "aiding and abetting" plagiarism. Students who do this can be charged with Academic Misconduct.

*Academic Integrity and AI Text-generating Tools:* Students must follow principles of academic integrity (e.g., honesty, respect, fairness, and responsibility) in their use of material obtained through AI text-generating tools (e.g., ChatGPT, Bing, Notion AI). Use of AI Tools is prohibited in this course: students may face an allegation of academic misconduct if using them to do assignments.

*Non-academic misconduct:* Students are expected to conduct themselves in a respectful manner on campus and in the learning environment irrespective of platform being used. Behaviour, communication, or acts that are inconsistent with a number of UW policies could be considered “non-academic” misconduct. More detailed information can be found here:

- Respectful Working and Learning Environment Policy  
<https://www.uwinnipeg.ca/respect/respect-policy.html>,
- Acceptable Use of Information Technology Policy  
<https://www.uwinnipeg.ca/policies/docs/policies/acceptable-use-of-information-technology-policy.pdf>
- Non-Academic Misconduct Policy and Procedures:  
<https://www.uwinnipeg.ca/policies/docs/policies/student-non-academic-misconduct-policy.pdf> and <https://www.uwinnipeg.ca/policies/docs/procedures/student-non-academic-misconduct-procedures.pdf>

*Copyright and Intellectual Property:* Course materials are the property of the instructor who developed them. Examples of such materials are course outlines, assignment descriptions, lecture notes, test questions, and presentation slides—irrespective of format. Students who upload these materials to filesharing sites, or in any other way share these materials with others outside the class without prior permission of the instructor/presenter, are in violation of copyright law and University policy. Students must also seek prior permission of the instructor/presenter before, for example, photographing, recording, or taking screenshots of slides, presentations, lectures, and notes on the board. Students found to be in violation of an instructor’s intellectual property rights could face serious consequences pursuant to the Academic Misconduct or Non-Academic Misconduct Policy; such consequences could possibly involve legal sanction under the Copyright Policy

<https://copyright.uwinnipeg.ca/basics/copyright-policy.html>

## **Privacy**

Students have rights in relation of the collecting of personal data the University of Winnipeg:

<https://www.uwinnipeg.ca/privacy/admissions-privacy-notice.html>.

More information:

- Zoom and Privacy: <https://www.uwinnipeg.ca/privacy/zoom-privacy-notice.html>
- Testing/Proctoring: <https://www.uwinnipeg.ca/privacy/zoom-test-and-exam-proctoring.html>.

## **Class Cancellation, Correspondence with Students and Withdrawing from Course**

When it is necessary to cancel a class due to exceptional circumstances, the course instructor will make every effort to inform students via uwinnipeg email and Nexus.

Students are reminded that they have a responsibility to regularly check their uwinnipeg e-mail addresses to ensure timely receipt of correspondence from the University and/or the course instructor.

Please let course instructor know if you plan on withdrawing from the course. Note that withdrawing before the VW date does not necessarily result in a fee refund.

### **Topics to be covered (tentative)**

1. Relational Databases
  - Creating databases – Table, indexes, forms, reports
  - Queries
  - Relationships and referential integrity
2. The relational model
  - Relations
  - SQL
3. Database design
  - Entity-Relation Diagrams
    - Entities, attributes, relationships
    - Mapping to relational databases, DDL
  - Normal forms
    - 1NF, 2NF, 3NF, Functional dependencies, BFNF
4. *Other topics as time permits*

*A permitted or necessary change in mode of delivery may require adjustments to important aspects of course outlines, like class schedule and the number, nature, and weighting of assignments and/or exams.*