THE UNIVERSITY OF WINNIPEG

APPLIED COMPUTER SCIENCE

Course Number – ACS-3902-001
Course Name – Database Systems

Instructor Information

Instructor: **Ron McFadyen** **Office:** 3D21
E-mail: **ron.mcfadyen @gmail.com** **Office Hours**: Th: 10:00-11:00
or by email appointment

Class Meeting Time: T Th 1:00 pm – 2:15 pm **Room No:** 3D04
Course Web Page: https:// nexus.uwinnipeg.ca

Important Dates

First Class:	T Sep 4, 2018
Reading Week (no classes, no labs)	Su Oct 7 – Sat Oct 13, 2018
Tests:	Th Oct 4, 2018 & Th Nov 1, 2018
Final Withdrawal Date w/o academic penalty:	M Nov 12, 2018

(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)

Last Class:	Th Nov 29, 2018
Final Exam:	M Dec 17, 2018 @ 9:00 am

REMEMBRANCE DAY: University closed Nov 11, 2018

Course Objectives/Learning Outcomes

- Introduce theory of relational and NOSQL models.
- Provide the foundation for database design required by systems analysts, designers, programmers and data modelers.
- Introduce techniques utilized in the various stages of a database software development cycle.
- Cover EERDs, database languages, functional dependencies, normalization, physical data storage.

Evaluation Criteria

- Assignments: 25%
  - All assignments are to be completed individually
  - There will be 5 assignments worth 5% each
  - Due by midnight on due dates
  - Late assignments are accepted, up to 2 days, with 20% off per day
  - Assignments typically involve programming and are submitted via Nexus
  - Multiple submissions are permitted. Students may submit a partially completed assignment, and will receive credit for those attempted problems
  - Students are responsible to review their assignments before submission to make sure the correct files are attached to the email
  - As required, *.java, *.js, *.json, or *.sql files must be submitted for programming questions. Non programming questions must be typed using a word processor or drawing software and submitted as a PDF file (Portable Document Format). The details of submission procedure will be stated in each assignment
- Midterm Tests: 25%
  - Test 1: 10%, Test 2: 15%
- Final Exam: 50%
  - The final exam covers all material discussed in the course

Exam Requirements

- Photo ID at exam is required.
- You are expected to write the test/exam on its given day.
- No electronic devices (e.g. phone, laptop, scientific calculators, translators, ...) are permitted.
- Tests and final exams are closed-book.
- Unless a medical certificate is provided, no accommodation is made for missed tests or exams.

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 - 90%	B	70 - 74%	D	50 - 59%
A-	80 - 84%	C+	65 - 69%	F	below 50%

Prerequisite and Restriction Information

(This information can be found in the UW Undergraduate Academic Calendar)

- A grade of at least C in ACS-2913(3) (or the previous ACS-2911(3) and ACS-2912(3)) and ACS-2814(3) (or the former ACS-2914(3))

Email Communication
Emails from accounts at uwinnipeg.ca are usually not filtered by the UofW email filter. Thereby it is recommended electronic communication used for the course utilize a UofW email account to minimize the risk of filtering.

Services for Students
Students with documented disabilities, temporary or chronic medical conditions, requiring academic accommodations for tests/exams (e.g., private space) or during lectures/laboratories (e.g., note-takers) are encouraged to contact Accessibility Services (AS) at 786-9771 or accessibilityservices@uwinnipeg.ca to discuss appropriate options. All information about a student's disability or medical condition remains confidential
http://www.uwinnipeg.ca/accessibility .

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 2018-2019 UW Undergraduate Academic Calendar.

All students, faculty and staff have the right to participate, learn, and work in an environment that is free of harassment and discrimination. The UW Respectful Working and Learning Environment Policy may be found online at www.uwinnipeg.ca/respect .

Misuse of Computer Facilities, Plagiarism, and Cheating
Academic dishonesty is a very serious offense and will be dealt with in accordance with the University's policies. Be sure that you have read and understood Regulations & Policies #8, in the 2018-2019 UW Undergraduate Academic Calendar available at http://uwinnipeg.ca/academics/calendar/docs/regulationsandpolicies.pdf. Additional information is available at University of Winnipeg library video tutorial "Avoiding Plagiarism" https://www.youtube.com/watch?v=UvFdxRU9a8g

Avoiding Academic Misconduct. 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.

Avoiding Copyright Violation. Course materials are owned by the instructor who developed them. Examples of such materials are course outlines, assignment descriptions, lecture notes, test questions, and presentation slides. 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 photographing or recording slides, presentations, lectures, and notes on the board.

Text Book(s) / Tools

Elmasri/Navathe, Fundamentals of Database Systems, 7th edition, Addison-Wesley, ISBN# 978-0-133970777
Class notes and notices will be available from: https://nexus.uwinnipeg.ca
Database systems used in class are available in ACS laboratories.

Topics to be covered (Tentative)

Dates	Topic
Sept 4 -13	NOSQL Databases (MongoDB)
Sept 18 – Oct 2	Ch 5 The relational data model and relational database constraints Ch 6 Basic SQL Ch 7 More SQL: complex queries, triggers, views, schema modification
Oct 4	Test 1
Oct 7 – 13	Reading week
Oct 16 - 30	Ch 3 Data modeling using the entity-relationship (ER) model Ch 4 The enhanced entity-relationship (EER) model. Ch 9 Relational database design by ER- and EER-to-relational mapping
Nov 1	Test 2
Nov 6 - 8	Ch 8 The relational algebra
Nov 13 - 15	Ch 14 Basics of functional dependencies & normalization
Nov 20 - 27	Ch 16, 17 file structures: hashing, indexing
Nov 29	Review
As time permits: Data warehousing, Object and object-relational databases, XML, Hierarchical data model	

Additional Course Related Information

1. When it is necessary to cancel a class due to exceptional circumstances, instructors will make every effort to inform you via uwinnipeg email, as well as the departmental assistant and Chair/Dean so that class cancellation forms can be posted outside classrooms.

2. Nexus and your uwinnipeg email address will normally be used for course related correspondence.

3. Please note that withdrawing before the VW date does not necessarily result in a fee refund.

4. Oct. 7 – 13 No classes: Mid-term reading week.