



THE UNIVERSITY OF WINNIPEG

APPLIED COMPUTER SCIENCE

Course Number ACS-4902-001

Course Name – Advanced Database Systems

Instructor Information

Instructor : Dr. Yangjun Chen

Office: 3D27

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Office Hours: 13:30 - 17:00 on Tuesday and Thursday
13:00 – 15:00 on Friday

Class Meeting Time: Tues. and Thur. 1:00 pm- 2:15 pm

Room No: 3D03

Important Dates

1. First Class Date: Jan. 08, 2019
2. Midterm Exam/Tests/Quizzes: Feb. 28, 2019, 1:00 - 2:15 pm
3. Final Exam (Comprehensive): April 22, 2019, 9:00 am
4. Final Withdrawal Date w/o academic penalty: March 15, 2019
(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)
5. Reading Week: Feb. 17 – 23, 2019
6. Last class date: April 04, 2019
7. Other Deadlines (e.g., assignments, term papers/projects):
four assignments, the deadlines will be determined during the course.

All assignments are handed in at class on the due date.

All works must be prepared using a word processor and placed in a folder.

Late assignments are accepted (up to 1 day late) and receive a 25% penalty.

Course Objectives/Learning Outcomes

The course is a continuation of ACS-3902/3 (Database Management Systems). It deals with advanced topics in database design, use, and administration.

Concretely, the knowledge on the following topics will be established:

1. System implementation and client/server architectures
2. Query processing and optimization
3. Transaction processing, concurrency, and recovery, which form the basis of OLTP systems
4. Security
5. Enhanced entity-relationship modelling
6. Object-oriented database management systems
7. Spatial and temporal data management

Evaluation Criteria

4 assignments	20%
1 midterm examination	25%
1 final examination	55%

Test/Exam Requirements

- No photo ID is required.
- Calculators/electronic translators but the text book can be used.

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., access to volunteer note-takers) are encouraged to contact Accessibility Services (AS) at 786-9771 or email accessibilityservices@uwinnipeg.ca to discuss appropriate options. Specific information about AS is available on-line at <http://www.uwinnipeg.ca/accessibility>. All information about a student's disability or medical condition remains confidential.

The University of Winnipeg promotes a scent-free environment. Please be respectful of the needs of your fellow classmates and your instructor by avoiding the use of scented products while attending lectures. Exposure to perfumes and other scented products (such as lotion) can trigger serious health reactions in persons with asthma, allergies, migraines or chemical sensitivities.

Required Text Book(s)/Reading List

Elmasri/Navathe, Fundamentals of Database Systems, 3rd, 4th, 5th, 6th or 7th edition, Addison-Wesley, ISBN# 0-8053-1755-4

Class Notes are available on the web page: <http://www.uwinnipeg.ca/~ychen2>.

Prerequisite Information*

A grade of at least C in both ACS-2947/3 and ACS-3902/3

*Make sure that you have the necessary prerequisites to take this course. If you have not successfully completed the above listed courses, it is in your interest to go to student registration office and officially drop the course. Otherwise, the registration office will do it on your behalf.

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., notetakers) 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 2018-19 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.

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. 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. Class make-up days are scheduled at the end of term for courses that conflict with holidays

Tentative Course Outline and Schedule

Chapter 2 (6 th ed.)	Database system architecture and the system catalog
Chapter 11 (6 th ed.)	Concepts for object-oriented databases
Chapter 12 (6 th ed.) (and lecture notes)	XML: Extensible Markup Language
Chapter 13 (6 th ed.) (and lecture notes)	Introduction to SQL Programming Techniques
Chapter 15 (5 th ed.) (and lecture notes)	Query processing and optimization
Chapter 18 (6 th ed.)	Indexing structures for files

(and lecture notes)

Chapter 21 (6th ed.) Transaction processing concepts
Chapter 22 (6th ed.) Concurrency control techniques
Chapter 23 (6th ed.) Database Recovery techniques
Chapter 24 (6th ed.) Database security and authorization
Lecture notes Spatial Databases

Note: all topics listed on the outline may not be covered.