



We acknowledge that we are on the traditional, ancestral and unceded territory of the hən̓q̓əmiñəm̓ speaking Musqueam people.

iSchool Mission: Through innovative research, education and design, our mission is to enhance humanity's capacity to engage information in effective, creative and diverse ways.

ARST/LIBR 554: Database Design – Course Syllabus (3)

Program:	MLIS, MAS, DUAL MAL/MLIS
Year:	Winter Session 2019/20 – Term 2
Course Schedule:	Thursdays, 2:00 pm to 4:50 pm
Location:	Terrace Lab
Instructor:	Nadya Calderon-Romero
Office location:	iSchool Adjunct Office
Office phone:	(604)822-0051
Office hours:	Thursdays from 10:00 am to 12:00 pm
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Learning Management Site:	http://lthub.ubc.ca/guides/canvas/

Course Goal: In the era of information explosion, data management has become an important challenge, requiring database management skills. The aim of a database system is to provide a convenient and efficient way to retrieve and analyze data stored in a database. The goal of this course is to provide students with knowledge and skills necessary to produce a well-designed database that enables the timely delivery of accurate information in a useful form. The course emphasizes the understanding of relational systems to manage information.

Course Objectives:

Upon completion of this course students will be able to:

1. Explain basic database concepts and terminology [1.4, 2.1]*
2. Identify information needs within an organization [1.1, 3.1, 3.2, 5.3]*
3. Formulate user and organizational requirements for a database [1.1, 2.1, 3.2]*
4. Design a conceptual model that satisfies these needs and requirements using a relational data / entity relationship model [1.1, 1.2, 2.1, 3.2]*
5. Normalize this relational data / entity relationship model [1.2, 1.3, 2.1]*
6. Implement the corresponding logical model in a relational database management software (e.g. MS ACCESS, MS SQL Server, etc.) [1.1, 1.2, 1.3, 3.1, 3.2, 5.3]*
7. Design SQL queries for a relational database to satisfy users' information needs [1.1, 1.2, 1.3, 3.1]*

* Course objectives are stated in terms of student learning outcomes and reference the iSchool Statement on Graduate Competencies: <http://slais.ubc.ca/programs/about-department/graduate-competencies/>

** This course is largely based on the course designed by Dr. Richard Arias-Hernandez in previous terms.



Course Topics:

- Concepts and terminology related to database design and management
- Components of a Database Management System
- Conceptual design and Entity Relationship Diagram (ERD)
- Relational model of data
- Normalization
- Logical modeling with Data Definition and Data Modification Language
- Creating a database
- Querying a database using SQL

Prerequisites: Completion of MLIS Core or permission of iSchool Graduate Advisor.

Format of the course

Class sessions will combine lectures, group discussions, and hands on in-class exercises. In-class and take-home questions and exercises are provided for students to review and evaluate their progress and completion of learning goals. A term-long database design project allows students to demonstrate they have achieved the course objectives.

Required and Recommended Reading

DATABASE SYSTEMS: Design, Implementation, and Management. EITHER 10th Edition by Coronel, Morris and Rob OR 11th OR 12th Edition by Coronel and Morris. Publisher: Cengage Learning. One copy of the 10th ed. is available on reserve at the I.K. Barber Library.

Course Assignments:

Due dates and weight in relation to final course mark are as follows:

Assignment Name	Due Date	Weight
Submit your team information and project client ideas.	January 30	n/a
Term Project – Part I (DB initial study & Conceptual Design. Includes In-class presentation)	February 15	20%
DBD Concepts Midterm	February 27	20%
Term Project – Part II (Logical Design)	March 14	20%
SQL Quiz	March 26	20%
Term Project – Part III (SQL Queries & Physical Design). Includes in-class presentation	April 09* (with presentations from April 02)	15%
Participation & in-class activities **		5%

* Project Presentations scheduled during the last day of class and during a make-up session on April 9

**Participation in class activities and discussions is required.



Course Schedule [week-by-week]:

Session	Topics	Assignments
Week 01, January 09	Course Overview. Database concepts	
Week 02, January 16	Database Design Process Conceptual Design: The Relational Database Model	
Week 03, January 23	Conceptual Design: Entity Relationship Modeling (ERM)	
Week 04, January 30	No meeting this week – Work on ERM activity	Submit your team info
Week 05, February 06	Conceptual Design: Extended ERM	
Week 06, February 13	Conceptual Design: Normalization	Term Project – Part I is due this week
February 17 - 21	Spring Break	
Week 07, February 27	Database Design Midterm	
Week 08, March 05	Introduction to SQL. SQL Queries (I) Database Definition	
Week 09, March 12	SQL Queries II: SELECT	Term Project – Part II is due this week.
Week 10, March 19	SQL Queries III: JOIN & Functions	
Week 11, March 26	SQL Queries IV: Relational operators, Views & Stored Procedures	SQL Quiz
Week 11, April 02	Trends in Big Data DBMS: Interfacing with other systems (Tableau) Final Project presentations	
** April 09 Optional Make up session	Final Project presentations	Term Project – Part III is due

Attendance: Attendance is required in all class meetings. If you know you are going to be absent you must inform me beforehand if at all possible. Up to One (1) excused absences are allowed with prior notification to me. Additional absences will require a note from a health professional or Access and Diversity. Failure to provide this documentation could result in a lower course mark.

Evaluation: All assignments will be marked using the evaluative criteria given on the [iSchool web site](#). The midterm and the SQL quiz are review and application of the concepts learned. The midterm will include all topics covered about the modeling and conceptualization of a relational DB. The SQL Quiz will be a review of SQL queries.

Policies and Resources to Support Student Success: UBC provides resources to support student learning and to maintain healthy lifestyles but recognizes that sometimes crises arise and so there are additional resources to access including those for survivors of sexual violence. UBC values respect for the person and ideas of all members of the academic community. Harassment and discrimination are not tolerated nor is suppression of academic freedom. UBC provides appropriate accommodation for



students with disabilities and for religious and cultural observances. UBC values academic honesty and students are expected to acknowledge the ideas generated by others and to uphold the highest academic standards in all of their actions. Details of the policies and how to access support are available here (<https://senate.ubc.ca/policies-resources-support-student-success>)

Centre for Accessibility: Centre for Accessibility works with the University to create an inclusive living and learning environment in which all students can thrive. The University accommodates students with disabilities who have registered with the Centre for Accessibility unit: [<https://students.ubc.ca/about-student-services/centre-for-accessibility>]. You must register with the Disability Resource Centre to be granted special accommodations for any on-going conditions.

Religious Accommodation: The University accommodates students whose religious obligations conflict with attendance, submitting assignments, or completing scheduled tests and examinations. Please let your instructor know in advance, preferably in the first week of class, if you will require any accommodation on these grounds. Students who plan to be absent for family obligations, or other similar commitments, cannot assume they will be accommodated, and should discuss with the instructor before the course drop date. UBC policy on Religious Holidays: <http://equity.ubc.ca/days-of-significance-calendar/>

Academic Integrity

Plagiarism

The Faculty of Arts considers plagiarism to be the most serious academic offence that a student can commit. Regardless of whether or not it was committed intentionally, plagiarism has serious academic consequences and can result in expulsion from the university. Plagiarism involves the improper use of somebody else's words or ideas in one's work. The UBC policy on Academic Misconduct is available here: <http://www.calendar.ubc.ca/Vancouver/index.cfm?tree=3,54,111,959>.

It is your responsibility to make sure you fully understand what plagiarism is. Many students who think they understand plagiarism do in fact commit what UBC calls "reckless plagiarism." The UBC Learning Commons has a resource page on how to avoid plagiarism, with policies on academic integrity and misconduct found here: [<http://learningcommons.ubc.ca/resource-guides/avoid-plagiarism/>]

If after reading these materials you still are unsure about how to properly use sources in your work, please ask your instructor for clarification.

Other Course Policies – The instructor holds regular office hours for drop-in meetings, at the times noted in this syllabus. In addition, consultations can be made by email. The instructor will attempt to respond to email within 2 working days, but this may not be possible at all times during the term. If students do not receive replies within that time frame, they are invited to resend the email with a polite reminder or visit the office hours.

Canvas: UBC's e-learning system <https://canvas.ubc.ca> will be used to organize class resources, slides, and additional material. It will also be used to manage assignments, grades, and in-class exercises. Make sure that you check the course space in Canvas constantly for announcements, resources, assignments, feedback and grades.

FNCC specialization: The term project in this course can serve the requirements of the First Nations Curriculum Concentration (FNCC). If students would like to take this course for FNCC credit, they are invited to contact the instructor to discuss this option. It may be possible especially if students have already a previous project to build upon, cataloguing or archival material, etc.