LIS 533 Database Design for Information Management

Course Outline
Winter 2018

Instructor: Dr. Dangzhi Zhao

Email: dzhao@ualberta.ca; Phone: (780) 492-2814; Office: 3-13 Rutherford South

Office hours: 4:00 – 5:00pm (Mountain Time) on Fridays

Calendar Description:

An introduction to core concepts, principles, and techniques of database design for information management, from user requirement analysis, to data and information modeling and querying.

Course Objectives:

At the completion of this course, the students will be able to:

1. Explain features and strengths of database technology for information management and its relation to Web technology including XML.
2. Elaborate on the importance of discovering and analyzing users’ information management needs and requirements in developing database applications.
3. Explain key concepts of relational database model.
4. Apply database design methodologies and associated techniques to real world information management situations.
   - Use ER modeling in database design
   - Use a particular relational DBMS to implement database designs
   - Use SQL for basic database queries and data manipulation
   - Understand normalization

Measurable Student Learning Outcomes (SLOs):

- Throughout the course, students will be able to actively contribute to and participate in informed and engaging discussions and exercises.
- Through exercises, students will be able to use individual methods and techniques of relational database design and implementation.
- Through the final project, which is informed by all other parts of the course, students will be able to apply relational database theory as well as design methodology and associated techniques to real world information management situations.

Content:
● Database application lifecycle
● User requirement analysis and fact-finding techniques
● Entity-Relationship modeling
● Developing relational models
● Normalization
● Defining relational databases with MS Access and SQL
● Manipulating database content using Query-By-Example and SQL
● XML and relational databases
● Web technology and DBMSs

Methods:

A combination of examples, tutorials, discussions, exercises, and case studies will be used throughout this course.

Course Relationships:

Elective course; Pre- or co-requisite: LIS 501

Required Textbook and Software Program:

● MS Access. Please note that this software program is only available for Windows systems.

Assignments and Weighting:

● Class contribution (20%)
● Small assignments (10% x 3 assignments: SQL, MS Access, ER Modeling)
● Term project (50%)

School of Library and Information Studies Grading Procedure:

Grades reflect professional judgements of student achievement made by instructors. These judgements are based on a combination of absolute achievement and relative performance in class. The instructor should mark in terms of raw scores, rank the assignments in order of merit, and with due attention to the verbal descriptions of the various grades, assign an appropriate final letter grade. ([https://www.ualberta.ca/school-of-library-and-information-studies/resources-and-forms/slis-policies-and-documents/slis-grading-procedure](https://www.ualberta.ca/school-of-library-and-information-studies/resources-and-forms/slis-policies-and-documents/slis-grading-procedure))

Academic Integrity:

The University of Alberta is committed to the highest standards of academic integrity and honesty. Students are expected to be familiar with these standards regarding academic honesty and to uphold the policies of the University in this respect. Students are particularly urged to familiarize themselves with the provisions of the Code of Student Behaviour ([online at](https://www.ualberta.ca/school-of-library-and-information-studies/resources-and-forms/slis-policies-and-documents/slis-grading-procedure))
and avoid any behaviour which could potentially result in suspicions of cheating, plagiarism, misrepresentation of facts and/or participation in an offence. Academic dishonesty is a serious offence and can result in suspension or expulsion from the University.

**Inclusive Language and Equity:**

The Faculty of Education is committed to providing an environment of respect for all people within the university community and to educating faculty, staff, and students in developing teaching and learning contexts that are welcoming to all. The Faculty recommends that students and staff use inclusive language to create a classroom atmosphere in which students’ experiences and views are treated with equal respect and value in relation to their gender, racial background, sexual orientation and ethnic background. Students who require accommodations in this course due to a disability affecting mobility, vision, hearing, learning, or mental or physical health are advised to discuss their needs with [Student Accessibility Services](http://www.governance.ualberta.ca/).

**Recording of Lectures:**

Recording of lectures is permitted only with the prior written consent of the professor or if recording is part of an approved accommodation plan.

*Policy about course outlines can be found in Section 23.4(2) of the University Calendar.*