LIS 9731 DATABASE MANAGEMENT SYSTEMS

Term: Summer 2024
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Course Delivery: Online, New lessons every Monday
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Course Description

Data modelling and database structures and their application to information retrieval and processing. Analysis of data requirements and implementation of systems using a relational DBMS. Mounting a database on the Web. Programming or scripting for database applications.

Enrollment in this course is restricted to graduate students in the Library and Information Science program as well as any student that has obtained special permission to enroll in this course from the course instructor as well as the Graduate Chair (or equivalent) from the student's home program.

Course-Level Learning Outcomes

Upon successful completion of readings, assignments, and class participation, students will be able to:
- Understand data modelling and database structures and their application to information retrieval and processing (Program-Level Learning Outcome 6).
- Analyze data requirements and implementation of systems by means of a relational database management system (Program-Level Learning Outcome 6, 8).
- Understand the concept of Web access to databases (Program-Level Learning Outcome 4, 6).

Recommended Reading

Jukic, N., Vrbsky, S., Nestorov, S., & Sharma, A. (2021). **Database Systems: introduction to databases and data warehouses** (Edition 2.0.). Burlington, VT: Prospect Press.
Available in the FIMS Library. Chapters 2 and 3 posted in OWL.

Coronel, C & Morris, S. (2014). *Database Systems: Design, Implementation, & Management*, 11th ed. Stamford, CT, USA: Cengage Learning. ISBN-13: 978-1285196145.
QA76.9.D26R62 2016
http://alpha.lib.uwo.ca/record=b6677837~S20
Available in the FIMS Library. Chapters 2 – 7 posted in OWL.

Eckstein, Jonathan & Schultz, Bonnie R. (2018**) Introductory Relational Database Design for Business, with Microsoft Access**, Hoboken, N.J.: John Wiley & Sons, Inc. ISBN-13: 978-1-119-32941-1
QA76.9.D3E325 2018
http://alpha.lib.uwo.ca/record=b7038179~S20
Available as an eBook through Western Libraries

Watt, Adrienne. **Database Design** – 2nd Edition BC Open TextBooks
https://opentextbc.ca/dbdesign01/

Other readings will be posted in OWL throughout the course.

Course Dates

WEEK	DATE	LESSONS	ASSIGNMENTS
1	Monday, May 6	Introduction to the course Types of Databases History of Databases	
	Friday, May 10		Exercise 1
2	Monday, May 13	Database in Excel Database in Access Access data types	
	Friday, May 17		Assignment 1
3	Monday, May 20	Entities Entity Relationships Entity Diagrams	
	Friday, May 24		Exercise 2
4	Monday, May 27	Discussion of Exercise 2 Normalization Rules	
	Friday, May 31		Exercise 3
5	Monday, June 3	Discussion of Exercise 3 Normalization Examples	
	Friday, June 7		Assignment 2
6	Monday, June 10	Queries in Access Northwind example database Names	
	Friday, June 14		Exercise 4
7	Monday, June 17	SQL	
	Friday, June 21		Exercise 5
8	Monday, June 24	Access Forms	
	Friday, June 28		Assignment 3

9	July 1 – 5	Research Week, no lessons or exercises	
10	Monday, July 8	Northwind Forms	
	Friday, July 12		Exercise 6
11	Monday, July 15	Access Reports	
	Friday, July 19		Exercise 7
12	Monday, July 22	mySQL Demo SQLExpress Demo	
13	Monday, July 29	Web database Thesis page tour PHP	
14	Friday, Aug. 9	Project work	Final Project

Lessons

This course will be delivered through OWL, Westerns Learning Management System (LMS).

Each lesson in OWL will have one or more short 10 to 20-minute videos, links to readings, and the lesson PowerPoint if applicable. The videos will consist of a lecture and demonstration.

Requirements

This course requires that every student have a computer that can run Microsoft Access. Many of the assignments and the final project are done in Access and there is no suitable replacement.

Access is part of the Microsoft Office 365 suite and every student can download it from https://myoffice.uwo.ca

Access is also included in the MyVlab virtual environment https://myvlab.uwo.ca/ provided by WTS (Western Technology Services).

MyVlab can be accessed from home and the VMWare Horizon client that is used to access myVLab will run on Windows, Macs or Linux.

There is no Mac version of Microsoft Access. That means that students with Apple Mac computers will have to use MyVlab (the recommended solution) or run a Windows virtual machine. Instructions on doing that will be available in OWL.

Marking

Content	Grade
Assignment 1	15
Assignment 2	20
Assignment 3	15
Project implementation and project report	30
Exercises	14
Participation	6

All assignments and exercises are due at 5:00pm on Friday of the indicated week in the course dates table.

The final project is due on the last day of classes Friday August 9, 2024. No extensions will be allowed for the final project due to marking deadlines.

Each exercise is worth 2 marks.

The exercises are intended to make sure that everyone is keeping pace with the material and not falling behind. You will get 1 mark for submitting an exercise and a second mark if it is correct.

Assignment 1   15 marks
        Create a database and discuss your design decisions.

Assignment 2   20 marks
        Normalize a database and discuss the rationale behind your choices.

Assignment 3   15 marks
        Develop 4 queries using your Assignment 2 database.

Final Project   30 marks
        Develop a Microsoft Access database system including menu, queries, forms and reports.

Exercise 1   2 marks
        Create an Access database with at least one table.

Exercise 2   2 marks
        List the entities in a specified scenario.

Exercise 3   2 marks
        List the entities, attributes, and relationships in a specified scenario.

Exercise 4   2 marks
        Create at least one query in an Access database.

Exercise 5   2 marks
        Write a SQL query for an example database.

Exercise 6   2 marks
        Create a form in an Access database.

Exercise 7   2 marks
        Create a report in an Access database.

Details on the assignments will be available in OWL. All assignments will be handed in through OWL and all marks will be returned in OWL.

The results of some exercises will be anonymously shared with the entire class with commentary.

Late assignments will be assessed a penalty of 5 marks out of 100 for each day that it is late. Since all assignments are due on Friday, if an assignment is handed in on Saturday, the penalty will be 5 marks out of 100, Sunday will be 10 out of 100, etc.

Late exercises will receive a mark of 0.

There will be two Q&A sessions per week on Thursday 10:00am to 11:00pm and 7:00pm to 8:00pm via Zoom. You do not have to share your video or audio to participate in the Zoom Q&A. However, doing so is encouraged as it creates a greater sense of community in the class. Questions can be asked via chat. It is not intended that students attend both sessions although that is allowed. You will receive ½ mark for each Thursday that you attend a Q&A session to a maximum of 6 marks. Attending both Q&A sessions on the same day does not give you extra participation marks although it is certainly allowed and encouraged.

The Zoom Q&A sessions will not be recorded.

Individual help is available through email or privately scheduled Zoom meetings.

Health/Wellness Services

Students who are in emotional/mental distress should refer to Mental Health@Western
https://www.uwo.ca/health/psych/index.html for a complete list of options about how to obtain
help.

Accessible Education Western (AEW)

Western is committed to achieving barrier-free accessibility for all its members, including graduate
students. As part of this commitment, Western provides a variety of services devoted to promoting,
advocating, and accommodating persons with disabilities in their respective graduate program.

Graduate students with disabilities (for example, chronic illnesses, mental health conditions, mobility
impairments) are strongly encouraged to register with Accessible Education Western (AEW), a
confidential service designed to support graduate and undergraduate students through their academic
program. With the appropriate documentation, the student will work with both AEW and their graduate
programs (normally their Graduate Chair and/or Course instructor) to ensure that appropriate academic
accommodations to program requirements are arranged. These accommodations include individual
counselling, alternative formatted literature, accessible campus transportation, learning strategy
instruction, writing exams and assistive technology instruction.

Statement on Academic Offences
Scholastic offences are taken seriously and students are directed to read the appropriate policy,
specifically, the definition of what constitutes a Scholastic Offence, at the following Web site:
http://www.uwo.ca/univsec/pdf/academic_policies/appeals/scholastic_discipline_grad.pdf