

LIS 9731 DATABASE MANAGEMENT SYSTEMS

Term: Summer 2020

Instructor: Charlotte McClellan

Email: charlotte.mcclellan@uwo.ca

Course Delivery: Online, New lessons every Monday

Office: FNB 2060B. Phone: 661-2111 ext. 88485

Office Hours: by appointment via Zoom

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.

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 and have the basic skills of mounting a database on the Web (Program-Level Learning Outcome 4, 6).

Recommended Reading

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>

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>

Hernandez, M. J. (2013). *Database Design for Mere Mortals: A Hands-On Guide to Relational Database Design*, 3rd ed. Boston: Addison-Wesley. ISBN-10: 0321884493.

QA76.9.D26H477 2013

<http://alpha.lib.uwo.ca/record=b6212430~S20>

The Graduate Library is looking into making these available online.

Selected excerpts will be posted to the OWL site under the fair use copyright exception.

Course Dates

WEEK	DATE	LESSONS	ASSIGNMENTS
1	Monday, May 4	Introduction to the course Types of Databases History of Databases	
	Friday, May 8		Exercise 1
2	Monday, May 11	Scenarios Database in Excel Database in Access Access data types	
	Friday, May 15		Assignment 1
3	Monday, May 18	Entities Entity Relationships Entity Diagrams	
	Friday, May 22		Exercise 2
4	Monday, May 25	Discussion of Exercise 2 Normalization Rules	
	Friday, May 29		Exercise 3
5	Monday, June 1	Discussion of Exercise 3 Normalization Examples	
	Friday, June 5		Assignment 2
6	Monday, June 8	Names Queries in Access	
	Friday, June 12		Exercise 4
7	Monday, June 15	SQL	
	Friday, June 29		Exercise 5
8	Monday, June 22	Access Forms	
	Friday, June 26		Assignment 3
9	June 29	Research week, no lessons	
10	Monday, July 6	Form examples	
	Friday, July 10		Exercise 6

12	Monday, July 13	Access Reports	
	Friday, July 17		Exercise 7
12	Monday, July 20	mySQL SQLExpress	
13	Monday, July 27	Web database Thesis page PHP	
14	Friday, Aug 7	Project work	Final Project

Lessons

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

Each lesson in OWL will have a short 10 to 20-minute video, links to readings, and the lesson PowerPoint if applicable. The videos will consist of 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>

There is no Mac version of Microsoft Access. That means that students with Apple Mac computers will have to run Windows on their computer.

This can be done in the following ways:

- Use Apple Boot Camp to install Windows as an alternative operating system
- <https://support.apple.com/en-ca/boot-camp>
- Use Parallels to run Windows as a virtual machine
- <https://www.parallels.com/ca/>
- Use the open source VirtualBox to run Windows as a virtual machine
- <https://www.virtualbox.org>

All 3 require buying a Windows activation code from Microsoft.

Marking

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

All assignments and exercises are due on Friday midnight of the indicated week in the course dates table.

Each exercise is worth 2 marks. You get 1 mark for trying the exercise and the 2nd mark if you followed instructions.

The exercises are intended to make sure that everyone is keeping pace with the material and not falling behind.

Assignment 1 15 marks

Create a database and discuss your design decisions

Assignment 2 20 marks

Normalize a database and discuss you're 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.

Your mid-term mark will be based on your marks for Assignments 1 and 2 and Exercises 1, 2 and 3.

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.

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

Participation will be determined by participation in Zoom question and answer sessions. These sessions will be scheduled at the start of the term and will be chosen by class vote to ensure that everyone is available.

The Zoom Q&A sessions will be recorded, and the log posted to OWL.

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