

Course Syllabus

Downloadable version:

 <p>USF Muma College of Business School of Information Systems and Management UNIVERSITY of SOUTH FLORIDA</p>	<p>Advanced Database Management ISM 6218 Summer 2023</p>
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Instructor:	Han Reichgelt, PhD
Office	LPH 430 St Petersburg CIS 2071 Tampa
Office phone	+1 727-873-4786
Cell phone	+1 678-314-4432
Email	reichgelt@usf.edu
Classroom	N/A Online
Time:	10:00-1:00 Selected Saturdays and Sundays (see provisional schedule)
Office hours	1:00-2:00 on Lecture Days 10:00-1:00 on non Lecture Days, or by appointment

Course Description:

As organizations gather and access more and more data, the issue of knowledge management in general and business intelligence and data analytics in particular takes on an increasing importance for organizational success. The importance of data for organizational success obviously raises the question how to manage the data.

This course examines a myriad of questions related to this, including

- How do you decide which data to store in the first place?
- What is the best way to store the data?
- How can you retrieve data from the data store?
- How do you secure data?

Course Objectives:

At the conclusion of this course, students are expected to be able to:

1. Describe the widely used relational database model.
2. Write queries using SQL.
3. Design and document database systems using entity-relationship diagram (ERD) tools.
4. Implement database systems using SQL data definition statements and integrity constraints.
5. Apply various techniques such as index structures and optimization modes to improve query performance.
6. Contrast a variety of alternative (NoSQL) database models with the relational model with regards to workload fit.
7. Create and query a NoSQL database

Course Material

Required:

NONE

We will of course rely heavily on Canvas. The Canvas privacy policy is at <https://www.canvaslms.com/policies/privacy> (<https://www.canvaslms.com/policies/privacy>).

NOTE: The course is designed for a Windows platform. If you are a Mac user, let me know as soon as possible because we have set up an alternative in the form of a Virtual Desktop. It will take a few days for you to get access to the VM.

Grading:

You will be assessed through a number of group and individual assignments, as well as a reflective essay on what you learned in the course and how you could use the competencies acquired in the course in your professional career.

In general, the individual assignments will be relatively structured and will typically have a single right answer. The group assignments, on the other hand, will be less structured and will require some discussion among the group members. Also, there will be in general be more than one right answer.

Groups will consist of 4 to 6 group members, and I will ask you to assess individually assess the participation of the group members in each project. Your individual grade will then be determined based on the grade of the group assignment and the contribution you made to the group project.

The inclusion for a reflective essay may need some justification. Research (see e.g.

<http://www.cmu.edu/teaching/principles/learning.html> )

(<http://www.cmu.edu/teaching/principles/learning.html>) has shown that learning improves considerably, especially for adult students, if students reflect on their learning and how they could use the competencies and knowledge that they acquired in a course through their own careers. There will be more details on what to include in the essay later on in the course.

Your grade will be determined as follows:

Assessments	total
Individual Assignments	280
Group Assignments	300
Reflective essay	50
Total	630

Your raw numerical grade will be converted to a letter grade according to the following table:

A+	>= 96.5%	<= 100%
A	>= 93%	< 96.5%
A-	>= 90%	< 93%
B+	>= 86.5%	< 90%
B	>= 83%	< 86.5%
B-	>= 80%	< 83%
C+	>= 76.5%	< 80%
C	>= 73%	< 76.5%
C-	>= 70%	< 73%
D+	>= 66.5%	< 70%
D	>= 63%	< 66.5%
D-	>= 60%	< 63%
F		< 60%

(<https://usflearn.instructure.com/courses/1585264/files/117703528/download?wrap=1>)

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Provisional Schedule

Date	Topics	Assessments		Deadlines
		Individual	Group	
May 13	Course Introduction Database Design Entity Relationship Diagrams	ERD Exercise in draw.io		May 18
			ERD Exercise in draw.io	May 19
May 14	Mapping ERD to Logical Designs, Normalization	Screenshots		May 19

	SQL Server 2022 Developer	Logical and Physical Designs for Individual ERD		May 25
			Logical and Physical Designs for Group ERD	May 26
May 20	SQL 1	Details in Module		May 29
			Details in Module	May 30
May 21	SQL 2	Details in Module		Jun 1
			Details in Module	Jun 9
May 27	No Scheduled Class			
May 28	No Scheduled Class			
Jun 3	Database Administration Improving Database Performance	Details in Module		Jun 9
			None	
Jun 4	No-SQL Databases Mongo DB	Reflection Paper		Jun 9
Jun 10	No Scheduled Class			
Jun 11	No Scheduled Class			

Course Policies

Contacting the Instructor:

The easiest way to contact me is through CANVAS. I typically log in at least once a day, and often more frequently. You can also reach me by email as reichgelt@usf.edu or on my mobile +1 678-314-4432. I will normally answer you within 24 hours and often more quickly, unless I have indicated through a course announcement that I may not be able to.

Communications from the Instructor:

I will in general communicate with you through course emails and course announcements, and it is therefore crucial that you log in at least twice a week to make sure that there are no new messages from me. I will also communicate with you by leaving comments on the various assignments that you complete. It is important that you read these even if you earned the maximum grade on the assignment because I often make some comments on how you could further improve the assignment.

University Policies:


There are a number of university policies that apply to all courses, including this one. Please refer to

<https://www.usf.edu/provost/faculty/core-syllabus-policy-statements.aspx> 

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for those policies.

Honor System:

Under the USF Honor System, each student is expected to observe complete honesty in all academic matters. Violation of the Honor System will be referred to the Honor Council. Note: The following are violations of the Honor Code: Copying another student's homework, signing another student's name on the attendance roster, copying another group's disk or written work, using another student's computer disk to print out your assignment, copying another student's file onto your disk, and misrepresenting a reason for a missed exam. Punishment for academic dishonesty may result in an automatic "F" or "FF" in the course or action that may result in suspension or expulsion. See the USF Policy on Academic Dishonesty & Disruption of the Academic Process at <https://usf.app.box.com/v/usfregulation3027>  (<https://usf.app.box.com/v/usfregulation3027>).

Students with Accessibility Issues:

Please notify your instructor by the second class meeting if you have a learning disability or require special assistance with this course.

We have made every effort to make the course material as accessible as possible. However, we rely heavily Canvas in this course. Consult <https://community.canvaslms.com/docs/DOC-2061> (<https://community.canvaslms.com/docs/DOC-2061>) for the accessibility practices policies for Canvas. If you run into accessibility problems with either, please contact me.

S/U Grades:

This course cannot be taken on an S/U basis.

Title IX and Responsible Employees:

All USF faculty (adjunct, TA, etc) are designated Responsible Employees. If you have experienced sexual harassment, sexual violence, relationship violence or stalking, Responsible Employees are here to listen and connect you to resources. When a disclosure is made to a Responsible Employee, they will notify the Title IX Office on your behalf and that office will send you an email with your rights, policies, and resources (if it is safe to do so). You are not obligated to respond to this email and The Title IX Office does not share

information about the report unless requested by the discloser or as required to address imminent risk to members of our community.











Confidential Resources (listed below) are available and will not be required to notify the Title IX office of disclosures of sexual harassment. If you are not sure what to do, you are encouraged to contact Victim Advocacy to confidentially explore your options including: injunctions & protective orders; changes in accommodations, living arrangements, class schedules, & transportation; assistance with academic Issues-missed classes, late assignments, etc. The Title IX Office can also provide academic, on-campus housing and USF workplace accommodations, as well as other supportive measures.






Confidential Resources	Non-Confidential Resources
Victim Advocacy in the Wellness Center SLC 2200 727-873-4432 https://www.stpetersburg.usf.edu/student-life/wellness/victim-advocacy-services/index.aspx (https://www.stpetersburg.usf.edu/student-life/wellness/victim-advocacy-services/index.aspx)	Title IX 813-974-4373 https://www.usf.edu/title-ix/ (https://www.usf.edu/title-ix/)
Counseling at the Wellness Center SLC 2200 727-873-4422 https://www.stpetersburg.usf.edu/student-life/wellness/psychological-services/index.aspx (https://www.stpetersburg.usf.edu/student-life/wellness/psychological-services/index.aspx)	Student Outreach & Support PMB 101 727-873-4278 https://www.stpetersburg.usf.edu/student-life/student-outreach-program/ (https://www.stpetersburg.usf.edu/student-life/student-outreach-program/)
Ombudsman Free, confidential conflict resolution PNM 105B 727-873-4184 https://wwwtest.stpetersburg.usf.edu/resources/ombuds.aspx (https://wwwtest.stpetersburg.usf.edu/resources/ombuds.aspx)	Student Conduct & Ethical Development PNM 101B 727-873-4278 Usfsp-conduct@usf.edu (mailto:Usfsp-conduct@usf.edu) https://www.usf.edu/student-affairs/student-conduct-ethical-development/about-us/contacts.aspx (https://www.usf.edu/student-affairs/student-conduct-ethical-development/about-us/contacts.aspx)
Student Health Services at the Wellness Center SLC 2200 727-873-4422 https://www.stpetersburg.usf.edu/student-life/dean-of-students/	Dean of Students PNM 101 727-873-4278 https://www.stpetersburg.usf.edu/student-life/dean-of-students/

[life/wellness/index.aspx](https://www.stpetersburg.usf.edu/student-life/wellness/index.aspx)
<https://www.stpetersburg.usf.edu/student-life/wellness/index.aspx>
[\(https://www.stpetersburg.usf.edu/student-life/dean-of-students/\)](https://www.stpetersburg.usf.edu/student-life/dean-of-students/)
[life/dean-of-students/](https://www.stpetersburg.usf.edu/student-life/dean-of-students/)

Additional policies are available from the USF System Provost Website (<https://www.usf.edu/provost/>)
(<https://www.usf.edu/provost/>)

Course Summary:

Date	Details	Due
Thu May 18, 2023	 Individual ERD (https://usflearn.instructure.com/courses/1806132/assignments/13991051)	due by 11:59pm
Fri May 19, 2023	 Group ERD (https://usflearn.instructure.com/courses/1806132/assignments/13991037)	due by 11:59pm
	 Group ERD Performance (https://usflearn.instructure.com/courses/1806132/assignments/13991039)	due by 11:59pm
Thu May 25, 2023	 Individual Logical and Physical Design Assignment (https://usflearn.instructure.com/courses/1806132/assignments/13991053)	due by 11:59pm
	 Screenshots (https://usflearn.instructure.com/courses/1806132/assignments/13991061)	due by 11:59pm
Fri May 26, 2023	 Group Logical Design Performance Assessment (https://usflearn.instructure.com/courses/1806132/assignments/13991041)	due by 11:59pm
	 Logical and Physical Design Group Assignment. (https://usflearn.instructure.com/courses/1806132/assignments/13991057)	due by 11:59pm
Mon May 29, 2023	 Individual Assignment (https://usflearn.instructure.com/courses/1806132/assignments/13991045)	due by 11:59pm
Tue May 30, 2023	 Group Database Performance Assessment (https://usflearn.instructure.com/courses/1806132/assignments/13991033)	due by 11:59pm
	 Group DB Assignment (https://usflearn.instructure.com/courses/1806132/assignments/13991035)	due by 11:59pm

Date	Details	Due
Thu Jun 1, 2023	 <u>Individual SQL SELECT Assignment</u>	due by 11:59pm
	<u>(https://usflearn.instructure.com/courses/1806132/assignments/13991055)</u>	
Fri Jun 9, 2023	 <u>Group Business Report</u>	due by 11:59pm
	<u>(https://usflearn.instructure.com/courses/1806132/assignments/13991031)</u>	
	 <u>Group Report Performance Assessment</u>	due by 11:59pm
	<u>(https://usflearn.instructure.com/courses/1806132/assignments/13991043)</u>	
	 <u>Individual Assignment Module 5</u>	due by 11:59pm
	<u>(https://usflearn.instructure.com/courses/1806132/assignments/13991049)</u>	
	 <u>Reflection Paper</u>	due by 11:59pm
	<u>(https://usflearn.instructure.com/courses/1806132/assignments/13991059)</u>	