

**CS/DSA 4513 – DATABASE MANAGEMENT SYSTEMS – ONLINE SECTIONS 995-999
FALL 2021**

INSTRUCTOR: Dr. Le Gruenwald; Email: ggruenwald@ou.edu; Office Hours: 4:30 PM-5:30 PM CST (Mon, Wed) via Zoom

TEACHING ASSISTANT (TA): Taras Basiuk; Email: taras.basiuk@ou.edu;
Office Hours via Zoom are posted on the class website on Canvas

ZOOM MEETING CREDENTIALS: The Zoom meeting credentials for the office hours of the instructor and TA are posted on the class website on Canvas

COURSE DESCRIPTION: This course concentrates on the concepts and structures necessary to design and implement a database system. It is oriented towards the general principles, their applications, and the relevant theoretical foundation. It does not devote any significant time to discussion of specific commercial packages.

REQUIRED TEXT: Abraham Silberschatz, Henry Korth, and S. Sudarshan, *Database System Concepts*, 7th Edition, McGraw-Hill, 2019.

REFERENCE MATERIAL: Sara Baase, *A Gift of Fire, Chapters 2 and 8*, 4th Edition, Prentice Hall, 2013.

CLASS WEBSITE: <https://canvas.ou.edu>

PREREQUISITES: (CS 2413 or CS/DSA 5005) and (CS 2813 or CS/DSA 5005 or Math 2513) and current enrollment in the MS in DSA program at OU.

COURSE CONTENTS:

Topic	Reading
1. Introduction - Basic Concepts of DBMS	Ch.1 (Silberchatz)
2. Entity-Relationship Model	Ch.6 (Silberchatz)
3. Relational Model and SQL	Ch. 2, 3, 4, 5, 7 (Silberchatz)
4. File Organization, Indexing, and Hashing	Ch. 10, 11 (Silberchatz)
5. Formal Query Languages	Ch. 2, 27 (Silberchatz)
6. Functional Dependencies and Normalization	Ch. 8 (Silberchatz)
7. Application Development	Ch. 7 (Siberchatz)
8. Query Processing	Ch. 15, 16 (Silberchatz)
9. Information Security and Privacy	Ch. 9 (Silberchatz), 2 (Baase)
10. Transaction Management and Database Recovery	Ch.17, 19 (Silberchatz), 8 (Baase)

GRADING:

Graded Homework	40%
Project	25%
Midterm Exam	15%
Final Exam	20%

No make-up exam or graded homework or project will be given.

GRADED HOMEWORK AND PROJECT: These will be assigned at 1:30 PM (CST) and due at 11:59 PM (CST) on the specified dates on Canvas. Late submissions will be accepted until 11:59 PM (CST) on the date following the due date with 5% penalty. Any late submission after this time will not be graded. All homework and project answers must be typed. Some homework/project files will need to be submitted in the PDF format, and some will be submitted in other formats, such as .java, .sql, or .txt files. The specific submission instructions for each individual graded homework assignment/project will be provided along with its description.

MIDTERM AND FINAL EXAMS: Exams will be open on Canvas for an 8-hour window on the exam dates. The midterm exam will be open from 1:30 PM (CST) to 9:30 PM (CST) on Monday, October 25, 2021 and the final exam will be open from 8:00 AM (CST) to 4:00 PM (CST) on Friday, December 17, 2021. Exams will be taken on Canvas. Once the exam is activated on Canvas, students will have a limited amount of time to complete it. The exact time limits for the midterm and final exams will be announced later. Please note that the exam period INCLUDES the scanning and uploading of handwritten answers, so allow sufficient time to upload these documents to Canvas. The system will record the time when a student retrieves the exam and the time when the exam is finally submitted. Make sure you monitor your own examination pace and ensure that submission is on time.

PRACTICE HOMEWORK: Practice homework assignments will be assigned on Canvas at the end of some lecture topics. They will not be graded. Their solutions will be posted on Canvas. It is the students' responsibility to do the practice homework assignments and evaluate their solutions. Be warned that reading the solutions to the practice homework assignments without trying to work the problems first is a very poor strategy and will almost certainly result in failure on the exams.

SOFTWARE SYSTEM: The details concerning the database management system that you will use to implement database applications for your homework assignments and class project will be provided later on Canvas when the Graded Homework 2 is assigned.

MATERIALS: Please make sure that you have the following hardware, software, and web accounts:

- A Webcam so that your midterm exam and final exam can be proctored;
- A Zoom account to communicate with me and the TA during our office hours;
- A PDF reader (the latest version) to read our PDF files;
- Access to a scanner or scanning app to PDF to submit the hand-written answer portions of the graded homework and exams. The scanning apps that have been vetted by the OU Center for Teaching Excellence include:
 - Evernote Scannable (only on [iOS](#))
 - Tiny Scan ([Android](#) & [iOS](#))
 - Genius Scan ([Android](#), [iOS](#) & [Windows Phone](#))

There are tutorials for the scanning apps available on Lynda.com which you can access for free. Just sign in with your OU 4x4 and password (<https://www.lynda.com/Android-tutorials/Using-PDF-scanner-mobile-apps/183383/367929-4.html>). Only a PDF file can be uploaded (i.e., an uploaded photo of a homework assignment will NOT be accepted).

ATTENDANCE: Since this is a fully asynchronous online class, you are expected to view all lectures, complete all readings, and do all practice homework assignments throughout the course.

ACADEMIC INTEGRITY: All work submitted for grading (graded homework, class project, midterm exam, and final exam) must be yours and yours alone. Plagiarism will result in action as specified in the Academic Integrity Code at OU: http://integrity.ou.edu/files/Academic_Misconduct_Code.pdf. Consult also the following web page for a Student's Guide to Academic Integrity at OU: http://integrity.ou.edu/students_guide.html.

RELIGIOUS OBSERVANCE: It is the policy of the University to excuse the absences of students that result from religious observances and to reschedule examinations and additional required classwork that may fall on religious holidays without penalty.

REASONABLE ACCOMMODATION POLICY: Students requiring academic accommodation should contact the Disability Resource Center for assistance at (405) 325-3852 or TDD: (405) 325-4173. For more information please see the Disability Resource Center website <http://www.ou.edu/drc/home.html>. Any student in this course who has a disability that may prevent him or her from fully demonstrating his or her abilities should contact me personally as soon as possible so we can discuss accommodations necessary to ensure full participation and facilitate your educational opportunities.

TITLE IX RESOURCES AND REPORTING REQUIREMENT: For any concerns regarding gender-based discrimination, sexual harassment, sexual misconduct, stalking, or intimate partner violence, the University offers a variety of resources, including advocates on call 24/7. To learn more or to report an incident, please contact the Sexual Misconduct Office at 405-325-2215 (8 to 5, M-F) or OU Advocates at 405-615-0013 (24/7). Also, please be advised that a professor/GA/TA is required to report instances of sexual harassment, sexual assault, or discrimination to the Sexual Misconduct Office. For more information, please see <http://www.ou.edu/eoo>.

ADJUSTMENTS FOR PREGNANCY/CHILDBIRTH RELATED ISSUES: Should you need modifications or adjustments to your course requirements because of documented pregnancy-related or childbirth-related issues, please contact your professor or the Disability Resource Center at 405-325-3852 as soon as possible. Please see <http://www.ou.edu/eoo/faqs/pregnancy-faqs.html> for answers to commonly asked questions.

TECHNICAL SUPPORT: For OU IT support, please phone (405) 325-HELP.

TENTATIVE SCHEDULE:

Date	Topic	Assigned	Due
Mon Aug 23	1		
Wed Aug 25	1		
Mon Aug 30	2		
Wed Sept 1	2		
Mon Sept 6	Labor Day		
Wed Sept 8	2, 3		
Mon Sept 13	3	Graded Homework 1	
Wed Sept 15	3		
Mon Sept 20	4		Graded Homework 1
Wed Sept 22	4	Graded Homework 2	
Mon Sept 27	4		
Wed Sept 29	4		
Mon Oct 4	4		Graded Homework 2
Wed Oct 6	4	Graded Homework 3	
Mon Oct 11	7	Project	
Wed Oct 13	5		
Mon Oct 18	5		Graded Homework 3
Wed Oct 20	5		
Mon Oct 25		Midterm Exam (proctored)	Midterm Exam
Wed Oct 27	6		
Mon Nov 1	6		
Wed Nov 3	6		
Mon Nov 8	6		
Wed Nov 10	8		
Mon Nov 15	8	Graded Homework 4	
Wed Nov 17	8, 9		Project
Mon Nov 22	9		
Wed Nov 24	Thanksgiving		
Mon Nov 29	9		Graded Homework 4
Wed Dec 1	9, 10		
Mon Dec 6	10		
Wed Dec 8	10		
Fri Dec 17		Final Exam (proctored, comprehensive)	Final Exam

Students are responsible for any changes/additions to this syllabus announced over the course of the semester.