

**DSA 4513 – DATABASE MANAGEMENT SYSTEMS – ONLINE SECTIONS 995 AND 996  
FALL 2017**

**INSTRUCTOR:** Dr. Le Gruenwald; Email: [ggruenwald@ou.edu](mailto:ggruenwald@ou.edu); Office Hours: 3:00 PM-4:30 PM CST (Mon, Wed) via Skype (Skype ID: legruenwald4556)

**TEACHING ASSISTANT (TA):** Venkat Tummala; Email: [tummala.ramcharran@ou.edu](mailto:tummala.ramcharran@ou.edu); Office Hours via Skype: will be announced later.

**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.

**TEXT:** Abraham Silberschatz, Henry Korth, and S. Sudarshan, *Database System Concepts*, 6th Edition, McGraw-Hill, 2011; and Sara Baase, *A Gift of Fire*, 4th Edition, Prentice Hall, 2013.

**LEARNING MANAGEMENT SYSTEM:** [www.janux.ou.edu](http://www.janux.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:**

<b>Topic</b>	<b>Reading</b>
1. Introduction - Basic Concepts of DBMS	Ch.1 (Silberchatz)
2. Entity-Relationship Model	Ch.7 (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. 6 (Silberchatz)
6. Functional Dependencies and Normalization	Ch. 8 (Silberchatz)
7. Evaluating and Controlling Technology	Ch. 7 (Baase)
8. Query Processing	Ch. 12, 13 (Silberchatz)
9. Information Security and Privacy	Ch. 9 (Silberchatz), 2 (Baase)
10. Database Recovery	Ch.14, 16 (Silberchatz), 8 (Baase)

**GRADING:**

Graded Homework	25%
Project	25%
Midterm Exam	20%
Final Exam	30%

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

**GRADED HOMEWORK AND PROJECT:** These will be assigned and due at 1:30 PM on the specified dates on the Janux platform. Late submissions will be accepted until 11:59 PM on the date following the due date with 5% penalty. Any late submission after this time will not be graded. Except for the Graded Homework 1 for which you can draw your ER diagram answers by hand, 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 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 the Janux platform for a 10-hour window on the exam dates on the Janux platform. The midterm exam will be open at 1:30 PM on Monday October 23, 2017 and the final exam will be open at 8 AM on Thursday December 14, 2017. Exams will be taken through the Janux platform. The proctoring service B Virtual will monitor your exam-taking activity via a webcam on your computer (required) in addition to monitoring your online and offline activity. Students must engage with B Virtual *prior* to taking the exam. Be sure to allot sufficient time to organize everything. Once the exam is activated on Janux, 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 the Janux platform. The system will record the time when a student retrieves the exam and the time when the exam is finally submitted, but the platform offers no timekeeping function for the student. As such, it is incumbent upon you to monitor your own examination pace and ensure that submission is on time.

**PRACTICE HOMEWORK:** Practice homework assignments will be assigned on the Janux platform at the end of a number of the topics covered. They will not be graded. Their solutions will be posted on the Janux platform. 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:** You will use the commercial database management system Oracle 12c, the Oracle SQL Developer 4.1, the JDBC, and the programming language Java to implement database applications. An account on Oracle 12c available at OU will be created for you and your login information will be emailed to you when the Graded Homework 2, which requires access to this system, is assigned. The instructions of how to access Oracle 12c and how to download Oracle SQL Developer 4.1, JDBC and Java Development Kit (JDK) will be posted on the Janux platform when the Graded Homework 2 is assigned.

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

- A Webcam and a B Virtual proctoring account so that your midterm exam and final exam can be proctored;
- A Skype 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 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](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](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:** The instructor and teaching assistant will not be able to help with issues related to the Janux platform. Needs for platform assistance should be addressed to the NextThought Help center at [janux@ou.edu](mailto:janux@ou.edu). For OU IT support, please phone (405) 325-HELP.

**TENTATIVE SCHEDULE:**

<b>Date</b>	<b>Topic</b>	<b>Assigned</b>	<b>Due</b>
Mon Aug 21	1		
Wed Aug 23	1		
Mon Aug 28	2		
Wed Aug 30	2		
Mon Sept 4	Labor Day		
Wed Sept 6	2, 3		
Mon Sept 11	3	Graded Homework 1	
Wed Sept 13	3		
Mon Sept 18	4		Graded Homework 1
Wed Sept 20	4	Graded Homework 2	
Mon Sept 25	4		
Wed Sept 27	4		
Mon Oct 2	4		Graded Homework 2
Wed Oct 4	4	Graded Homework 3	
Mon Oct 9	5	Project	
Wed Oct 11	5		
Mon Oct 16	5		Graded Homework 3
Wed Oct 18	5		
Mon Oct 23		Midterm Exam (proctored, Topics 1, 2, 3, 4)	Midterm Exam
Wed Oct 25	6		
Mon Oct 30	6		
Wed Nov 1	6		
Mon Nov 6	6		
Wed Nov 8	7		
Mon Nov 13	8	Graded Homework 4	
Wed Nov 15	8		
Mon Nov 20	9		Project
Wed Nov 22	Thanksgiving		
Mon Nov 27	9		
Wed Nov 29	9, 10		Graded Homework 4
Mon Dec 4	10		
Wed Dec 6	10		
Thur Dec 14		Final Exam (proctored, comprehensive)	Final Exam

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