BUAN 6320 (Database Foundations for Business Analytics)
Course Syllabus
Fall 2021
(Draft - Content and dates are subject to changes)

Course Information

Course Number: BUAN 6320.001
Title: Data Management
Term: Fall 2021
Class Hours: Wednesday 4:00pm-6:45pm
Location: JSOM 2.106

Instructor Information

Name: Uri Smashnov
Email: uri.smashnov@utdallas.edu
Office Hours Virtual: Book via MS Bookings. There will be at least two hour per week allocated for office hours with 15 min slots available for booking.
https://outlook.office365.com/owa/calendar/UriSmashnovOfficehoursDBFoundationsforBusinessAnalytics@utdallas.edu/bookings/

Office Hours rules:

- Book at least 14 hours in advance
- Book at most 14 days in advance
- Use your UTD email to book. Calendar appointment update with Team meeting link will be sent on the day of appointment

Teaching Assistant Information:

Name: Naina Chowdhary Vallurupalli
Email: ncv200001@utdallas.edu
Office Hours: Monday 2pm -3pm
Location:
https://outlook.office365.com/owa/calendar/BUAN6320001_UriSmashnov_TAHours@utdallas.e du/bookings/s/NAnHfcEoMEulqCIRN0SiDw2

Course Description

This course covers Structured Query Language (SQL) and NoSQL databases and focuses on understanding the differences, and to learn how to effectively query SQL and NoSQL databases. Topics include ER models, SQL, PL/SQL, query optimization, NoSQL database types, and NoSQL querying.

Course Modality – Delivery mode

The course will be delivered in class with the option for asynchronous learning only for students registered in the section 202 (Online access). All students registered in section 201 (In person), should attend lectures in classroom.

1) Every lecture will be recorded and available for viewing after the class in the MS Teams.
2) All Quizzes I, II and III will be administered via eLearning and will use Honorlock. The quizzes will take place during regular class hours and at the same time for all students. All students registered in section 201 (In Person) will take quizzes in the class, students registered in the section 202 (Online access) will take the quiz remotely.
3) Regardless of the way you choose to take the class, all deadlines are the same and applicable to all students.

Update 8/23/2021 – due to UTD policy on de-densification, number of students that can be present in the class might be limited. Please watch for announcements on eLearning.

Honorlock – Virtual Proctoring

*"**NOTICE:** enrollment in this course requires the use of Honorlock for online assessment proctoring. Your webcam is recording you during your test or assessment, but no one is watching your exam in real time. Honorlock uses technology to monitor your session, and, if it senses that something is wrong, it will trigger a pop in by a live proctor. The proctor will assess the situation, help you get back on track, and document this for your instructor. After your test, exam proctors may review the exam session to look for any potential violations, and the recording will also be sent to your instructor along with any notes from our proctors.*
*To successfully take an exam, you must have a web camera with microphone, a laptop or desktop computer (no tablets/phones), Chrome browser, a reliable internet connection and your photo ID. You will be prompted to install the Honorlock Chrome Extension (which you can remove after you finish the test). You will then access the exam within your eLearning course and go through the authentication process. Your microphone and web camera will be used by Honorlock to monitor you throughout your test or assessment. **YOUR ACTIVITIES ARE RECORDED WHILE YOU ARE LOGGED INTO OR TAKING YOUR ASSESSMENT(S). THE RECORDINGS SERVE AS A PROCTOR AND WILL BE REVIEWED AND USED IN AN EFFORT TO MAINTAIN ACADEMIC INTEGRITY.** Please see the **Testing Guidelines** and **Support Information** for additional information."*

Learning Objectives

- Understanding relational database concepts
- Being able to create a database using the entity-relationship modeling technique
- Being able to manipulate a database using the SQL language
- Understand difference between SQL and NoSQL DBs
- Being able to manipulate data using MongoDB and MongoDB version of NoSQL

Suggested Course Materials

1. John L. Viescas and Michael J. Hernandez, SQL Queries for Mere Mortals, 014. ISBN 13: 978-0-321-99247-5; ISBN-10: 0-321-99247-4 https://www.oreilly.com/library/view/sql-queries-for/9780133824889/?ar=
2. Michael V. Mannino. Database Design, Application Development, and Administration (7th Edition). Chicago Business Press, 2018. (ISBN: 1948426005, 9781948426008). Electronic rental/purchase options are available at the textbook Web site (https://chicagobusinesspress.com/book/mannino7).
3. Brad Dayley, NoSQL with MongoDB in 24 Hours, 2015. ISBN-13: 9780672337130 https://learning.oreilly.com/api/v1/continue/9780133844429/

Books #1 and #3 as well as additional materials can be found at the below Playlist on O'Reilly. You will need to login with your UT Dallas email account to be able to access the playlist.
https://learning.oreilly.com/playlists/5e507bd8-7cc1-4ae0-9b4b-850294a01399

For first time registration, follow the link below, and choose "Other" in the institutions drop-down:
https://utdallas.primo.exlibrisgroup.com/view/action/uresolver.do?operation=resolveService&package_service_id=2243160678510001421&institutionId=1421&customerId=1410

If above doesn't work, login into UTD Library (https://library.utdallas.edu/) , and use below link to find book #1. Under "View Online", follow O'Reilly online learning link.
https://utdallas.primo.exlibrisgroup.com/permalink/01UT_DALLAS/2hgl0t/alma9928031206101421

Other Course Materials

Scores and Class Grade: Assignments, projects, and exam scores as well as the estimated final grade will be available at the UTD eLearning site. Official final grade will be uploaded to Orion.

Class Notes: Class notes will be available through UTD eLearning site

Tools and Software to be used in class:

- You will need Laptop from the first day of class
- **Database:** Oracle Database 19c (No need to install on your machine) – Single DB will be utilized by all students in the class. Each student will be provided with user/DB schema to utilize for project and assignments.
- **SQL Client:** Oracle SQL Developer 19.1 and later versions
- **ER Diagrams** :
    - **Windows**: MS Visio, can be downloaded from MS Azure Educational portal https://oit.utdallas.edu/howto/azure-dev-tools/
    - https://azureforeducation.microsoft.com/devtools
    - **MAC:** you will need to use Web version of the MS Visio: https://support.microsoft.com/en-us/office/use-visio-on-a-mac-b3c71884-5464-45b3-b664-12a1f0b84913
    - **MongoDB –** each student will be responsible to provision his/her own MongoDB via MongoDB Atlas service running on AWS.

Mandatory installation:

- Oracle SQL Developer (19.1 or later**):** https://www.oracle.com/technetwork/developer-tools/sql-developer/downloads/index.html
- MS Visio (PC), use Web interface for MAC
    - https://oit.utdallas.edu/howto/azure-dev-tools/
    - https://azureforeducation.microsoft.com/devtools
- MongoDB Compass

Assignments

Individual Assignments: There will be several assignments and labs. You will have at least 7 days to complete each assignment. All assignments are individual work.

Projects

The class project will consist of two parts:

- Part 1: Will cover DB implementation by utilizing provided DB design, as well as normalizing and loading data into DB. Will be performed on Oracle DB.
- Part 2: NoSQL part will be done on MongoDB

The project can be developed individually or in groups of 2 people. You can use MS Teams “

Communications:

- MS Teams:
    - Class discissions
    - Project and assignment
    - All questions should be asked in MS Teams channels. No direct messaging, unless your question is personal
- eLearning:
    - All submissions
    - Lecture notes
    - Assignments and Projects
    - Class announcements
- Email: use email for personal questions only. When sending email, always use UTD email

Class Rules

- All assignments are **individual**.
- If you decided to work on the projects individually, there will be no bonus points
- All submissions are via eLearning only.
- Don’t share your DB user/password with anyone.
- We will be utilizing MS Teams for class discussions.
- All non-personal class material related questions should be asked via posting on MS Teams (no emails).
- You must bring laptop to every class. This is to enable you to follow class hands-on materials.
- All deliverables are due on the due date listed in eLearning at 23:59 US Central time. There will be grace period of 8 hours to deal with any potential submission issues. There will be no penalty if submitted during grace period. There will be no late submissions allowed after grace period runs out.

Exams

There will be three quizzes conducted via eLearning. All quizzes will be made available to all students at the same time, and will need to be completed during allocated time slot.
See "**Course Modality – Delivery mode"** for more details.

Class Participation

Regular class participation is expected regardless of course modality. Students who fail to participate in class regularly are inviting scholastic difficulty. A portion of the grade for this course is directly tied to your participation in this class. It also includes engaging in group or other activities during class that solicit your feedback on homework assignments, readings, or materials covered in the lectures (and/or labs). Class participation is documented by faculty. Successful participation is defined as consistently adhering to university requirements, as presented in this syllabus. Failure to comply with these University requirements is a violation of the Student Code of Conduct.

Class Recordings

Students are expected to follow appropriate University policies and maintain the security of passwords used to access recorded lectures. Unless the Office of Student Accessibility has approved the student to record the instruction, students are expressly prohibited from recording any part of this course. Recordings may not be published, reproduced, or shared with those not in the class, or uploaded to other online environments except to implement an approved Office of Student accessibility accommodation. Failure to comply with these University requirements is a violation of the Student Code of Conduct. The instructor may record meetings of this course. Any recordings will be available to all students registered for this class as they are intended to supplement the classroom experience. Students are expected to follow appropriate University policies and maintain the security of passwords used to access recorded lectures. Unless the Office of Student Accessibility has approved the student to record the instruction, students are expressly prohibited from recording any part of this course. Recordings may not be published, reproduced, or shared with those not in the class, or uploaded to other online environments except to implement an approved Office of Student Accessibility accommodation. If the instructor or a UTD school/department/office plans any other uses for the recordings, consent of the students identifiable in the recordings is required prior to such use unless an exception is allowed by law. Failure to comply with these University requirements is a violation of the Student Code of Conduct.

Class Calendar (content and dates are subject to changes):

	Date	Topics	Notes
1	8/25	Course Introduction Overview of Relational Databases	
2	9/1	Project 1 review Oracle DB overview Write SQL: Query one table	
3	9/8	Write SQL: Query one/multiple tables	
4	9/15	Write SQL: Grouping and Summarizing Data SQL – Optimization and Indexes	
5	9/22	Write SQL: Modifying Data Write SQL: Stored Programs PL/SQL	
6	9/29	Write SQL: Advanced Grouping and Summarizing Data	
7	10/6	**Quiz 1 – SQL** Data Modeling - Overview	
8	10/13	Data Modeling	
9	10/20	Data Modeling	
10	10/27	Data Modeling	
11	11/3	**Quiz 2 – Data Modeling** NoSQL and Mongo DB	
12	11/10	Write NoSQL queries using MongoDB	
13	11/17	Write NoSQL queries using MongoDB	
	11/25	Fall Break – no class	
14	12/1	**Quiz 3 - MongoDB**	

Grading Policy

1. **Quiz 1 – 20%**
2. **Quiz 2 – 15%**
3. **Quiz 3 – 15%**
4. **Project part 1 – 20%**
5. **Project part 2 – 10%**
6. **Assignments - 15%**
7. **Class participation – 5%**

Letter grades will be assigned based on the following ranges calculated student aggregated class score.

Grade	Start	End
A	91	100
A-	87	91
B+	83	87
B	80	83
B-	77	80
C+	73	77
C	60	73
F	0	60

Course Policies

Late Assignment: Late assignments and project submissions will be subject to penalties after the grace period is over. Grace period will consist of 6 hours after the posted deadline. Some assignments will not have late submission option.

Makeup Exams: There will be no make-up exams, except for medical emergency (written statement justifying the situation from a physician required) or other university accepted reason. The written statement should include the physician's address and phone number for the verification purpose.

Extra Credit
None

Special Assignments
None

Class Participation
Class participation will be part of the grade – students are expected to complete their class participation activities by the due dates provided in eLearning. Students are expected to view the recordings and review the slides as part of the preparatory work to help completion of assignments and quizzes.

Classroom Citizenship

Meaningful Class Participation: You are expected to actively participate in the discussion of any readings, contribute to the learning experience of the class, and meaningfully contribute to all group project work.

Respect and Dignity:

At UT Dallas we appreciate and foster the many advantages that come from working in a diverse community where everyone is treated equitably, with dignity and respect. The University of Texas at Dallas is committed to providing an educational, living and working environment that is welcoming, respectful and inclusive of all members of the university community. An environment that is free of discrimination and harassment allows members of the university community to excel in their academic and professional careers. To that end, to the extent provided by applicable federal and state law, the University prohibits unlawful discrimination against a person because of their race, color, religion, sex (including pregnancy), national origin, age, disability, genetic information, or veteran status. The University's Online/Blended Course Syllabus Page 8 commitment to equal opportunity extends its nondiscrimination protections to include sexual orientation, gender expression and gender identity. Students are expected to recognize and respect a diversity of backgrounds and opinions among their fellow students. They should demonstrate respect for all students as an individual, recognizing that students may bring differing backgrounds, opinions and insights into the classroom.

Comet Creed

This creed was voted on by the UT Dallas student body in 2014. It is a standard that Comets choose to live by and encourage others to do the same: "As a Comet, I pledge honesty, integrity, and service in all that I do." Academic Support Resources The information contained in the following link lists the University's academic support resources for all students. Please go to Academic Support Resources webpage for these policies. UT Dallas Syllabus Policies and Procedures The information contained in the following link constitutes the University's policies and procedures segment of the course syllabus. Please go to UT Dallas Syllabus Policies webpage for these policies. The descriptions and timelines contained in this syllabus are subject to change at the discretion of the Professor

Accommodations

It is the policy and practice of The University of Texas at Dallas to make reasonable accommodations for students with properly documented disabilities. However, written notification from the Office of Student Accessibility (OSA) is required. If you are eligible to receive an accommodation and would like to request it for this course, please discuss it with me and allow one week advance notice. Students who have questions about receiving accommodations, or those who have, or think they may have, a disability (mobility, sensory, health, psychological, learning, etc.) are invited to contact the Office of Student Accessibility for a confidential discussion. OSA is located in the Student Services Building, suite 3.200. They can be reached by phone at (972) 883-2098, or by email at studentaccess@utdallas.edu.

UT Dallas Syllabus Policies and Procedures

The information contained in the following link constitutes the University's policies and procedures segment of the course syllabus.

Please go to **http://go.utdallas.edu/syllabus-policies** for these policies.

The descriptions and timelines contained in this syllabus are subject to change at the discretion of the Professor.