University of Houston – C.T. Bauer College of Business, DISC Department

MIS 4397 / 7397 – Cloud Data Visualization
Fall 2023 – Thursdays, 1800-2100 cst

Instructor: Michael Lewis

Email: mjlewis@cougarnet.uh.edu

Office Hours: Thursdays at 1700 and by appointment (scheduled via email)

Prerequisite: **Completed MIS 3376 / Database Knowledge**

Cloud Data Visualization covers how to use Microsoft Power BI Desktop and the Microsoft Power BI Service to create, view, and share data insights. With experience in these two tools, you will be equipped to hit the ground in your next internship, at your first corporate job, or in your next role - ready to create visualizations of complex data and help leaders make decisions that matter!

Everyone is talking about the "cloud" - whether they are putting data in it, performing analytics on it, or building apps with it. But how are people getting data OUT of the cloud? Companies of all sizes - from supermajor oil and gas organizations to niche consulting firms - are reporting on cloud data like they never have before, and they are using business intelligence tools to do it! There is a significant need for resources who not only have the technical skills to build reports and mechanically operate the software but also have a foundation in business acumen – the sweet spot for (M)IS and analytics professionals.

This course covers principles of data-driven decision-making, how to connect to data, join it with other datasets, transform it for simplicity, perform calculations, visualize the results, make it available on mobile devices across an organization, and setting up Natural Language Queries.

The software used in this class will be Power BI Desktop and Power BI Pro – both will be provided by the university.

Teaching Methods

1. <u>Lectures and Discussions</u>: Important material from many sources will be covered in class. This coverage will be mostly in the form of hands-on (applied) problem solving. Students will work in software applications in real-time during class. Students should also plan to take careful notes on topics that are presented by the instructor.

2. <u>Assignments</u>: Problems and readings may be periodically assigned to help support and supplement material discussed during class. Assignments must be turned in on time.

3. <u>Exams</u>: Exams will be closed book/note and will test content from assignments and material discussed in class. Review material(s) will be provided prior to the exam day.

4. ***<u>NOTES ONLINE</u>:*** Some material will be distributed on the Internet, using the **Canvas** application and our course website (if applicable). It is assumed that students know how to access the content on Canvas and via provided URLs.

5. **Announcements** regarding the class such as schedule changes, assignments, projects, and so on will be made in class during the first 10 minutes as well as on Canvas. You are responsible for being in class on time to hear the announcements and for checking the Canvas page regularly.

6. **Contacting the Professor:** You can reach me by email, and I will try to get back to you within 48 hours. Realize that there are many of you and only one of me; if you wait until just before an assignment is due or the night before an exam, you may not get a response in time.

7. **Grading:**

   1. Exam #1 – 20%
   2. Exam #2 – 25%
   3. Class Exercises & Homework Questions: 15%
   4. Project – 40%
   5. Participatory (discretionary) extra credit: $\leq$ 2%

   The final course letter grade will follow the numeric-letter grade system used at the University of Houston. No changes to grades will be made.

8. **Project Description:** The class project will give you an opportunity to apply most of the skills you learn in this course. After the first quiz, you will be given the project data set as well as more details on the specifics required.

Course Policies

Assignments: All assignments are due at the beginning of class on the date due.

Academic Dishonesty

Plagiarism and cheating are serious offenses and may be punished by failure on exam, paper, or project, failure in the course, and/or expulsion from the University. For more information, refer to the "Academic Dishonesty" policy in the University's Catalog. The University of Houston Academic Honesty Policy is strictly enforced by the C.T. Bauer College of Business. No violations of this policy will be tolerated in this course. A discussion of the policy is included in the University of Houston Student Handbook, http://www.uh.edu/dos/hdbk/acad/achonpol.html. Students are expected to be familiar with this policy.

COVID-19 Information

Students are encouraged to visit the University's COVID-19 website for important information including diagnosis and symptom protocols, testing, vaccine information, and post-exposure guidance. Please check the website throughout the semester for updates. Consult the (select: Undergraduate Excused Absence Policy or Graduate Excused Absence Policy) for information regarding excused absences due to medical reasons.

Reasonable Academic Adjustments/Auxiliary Aids

The University of Houston complies with Section 504 of the Rehabilitation Act of 1973 and the Americans with Disabilities Act of 1990, pertaining to the provision of reasonable academic adjustments/auxiliary aids for disabled students. In accordance with Section 504 and ADA guidelines, UH strives to provide reasonable academic adjustments/auxiliary aids to students who request and require them. If you believe that you have a disability requiring an academic adjustments/auxiliary aid, please contact the Justin Dart Jr. Student Accessibility Center (formerly the Justin Dart, Jr. Center for Students with DisABILITIES).

Excused Absence Policy

Regular class attendance, participation, and engagement in coursework are important contributors to student success. Absences may be excused as provided in the University of Houston Undergraduate Excused Absence Policy and Graduate Excused Absence Policy for reasons including: medical illness of student or close relative, death of a close family member, legal or government proceeding that a student is obligated to attend, recognized professional and educational activities where the student is presenting, and University-sponsored activity or athletic competition. Under these policies, students with excused absences will be provided with an opportunity to make up any quiz, exam or other work that contributes to the course grade or a satisfactory alternative. Please read the full policy for details regarding reasons for excused absences, the approval process, and extended absences. Additional policies address absences related to military service, religious holy days, pregnancy and related conditions, and disability.

Missed Classes

The student is responsible for obtaining material, which may have been distributed on class days when (s)he was absent. This can be done through contacting a classmate who was present or by contacting the instructor during his office hours or other times. Missed or late exams cannot be made up under any circumstances unless an official excuse is provided. **Any uncoordinated, unexcused missed exam will result in a score of 0 for that exam.**

Recording of Class

Students may **NOT** **record** all or part of class, **livestream** all or part of class, or **make/distribute** screen captures, without advanced written consent of the instructor. If you have or think you may have a disability such that you need to record class-related activities, please contact the Justin Dart, Jr. Student Accessibility Center. If you have an accommodation to record class-related activities, those recordings may not be shared with any other student, whether in this course or not, or with any other person or on any other platform. Classes *may* be recorded by the instructor. Students may use instructor's recordings for their own studying and notetaking. Instructor's recordings are not authorized to be shared with *anyone* without the prior written approval of the instructor. Failure to comply with requirements regarding recordings will result in a disciplinary referral to the Dean of Students Office and may result in disciplinary action.

Resources for Online Learning

The University of Houston is committed to student success, and provides information to optimize the online learning experience through our Power-On website. Please visit this website for a comprehensive set of resources, tools, and tips including obtaining access to the internet, AccessUH, Blackboard, and Canvas, using your smartphone as a webcam, and downloading Microsoft Office 365 at no cost. For questions or assistance contact UHOnline@uh.edu.

UH Email
Please check and **use your Cougarnet email for communications related to this course**. To access this email, login to your Microsoft 365 account with your Cougarnet credentials.

Webcams

Access to a webcam is **required** for students participating remotely in this course. Webcams **must remain on** each class session to ensure participation and academic integrity during exam administration. Webcams are encouraged to be on throughout lecture and when asking questions during lecture.

Academic Honesty Policy

High ethical standards are critical to the integrity of any institution, and bear directly on the ultimate value of conferred degrees. All UH community members are expected to contribute to an atmosphere of the highest possible ethical standards. Maintaining such an atmosphere requires that any instances of academic dishonesty be recognized and addressed. The UH Academic Honesty Policy is designed to handle those instances with fairness to all parties involved: the students, the instructors, and the University itself. All students and faculty of the University of Houston are responsible for being familiar with this policy.

Title IX/Sexual Misconduct

Per the UHS Sexual Misconduct Policy, your instructor is a "responsible employee" for reporting purposes under Title IX regulations and state law and must report incidents of sexual misconduct (sexual harassment, non-consensual sexual contact, sexual assault, sexual exploitation, sexual intimidation, intimate partner violence, or stalking) about which they become aware to the Title IX office. Please know there are places on campus where you can make a report in confidence. You can find more information about resources on the Title IX website at https://uh.edu/equal-opportunity/title-ix-sexual-misconduct/resources/.

Security Escorts and Cougar Ride

UHPD continually works with the University community to make the campus a safe place to learn, work, and live. Our Security escort service is designed for the community members who have safety concerns and would like to have a Security Officer walk with them, for their safety, as they make their way across campus. Based on availability either a UHPD Security Officer or Police Officer will escort students, faculty, and staff to locations beginning and ending on campus. If you feel that you need a Security Officer to walk with you for your safety please call 713-743-3333. Arrangements may be made for special needs.

Parking and Transportation Services also offers a late-night, on-demand shuttle service called Cougar Ride that provides rides to and from all on-campus shuttle stops, as well as the MD Anderson Library, Cougar Village/Moody Towers and the UH Technology Bridge. Rides can be requested through the UH Go app. Days and hours of operation can be found at https://uh.edu/af-university-services/parking/cougar-ride/.

Syllabus Changes

Please note that the instructor reserves the right to make necessary modifications to the course syllabus. Notice of such changes will be announced as quickly as possible at the beginning of class and via Canvas.

<u>Tentative Lecture Outline</u>

This outline is tentative. We will go over the topics described below in an applied way. That is, in solving problems our focus will be on the topic of the day. Please keep in-mind that the order in which these topics are covered may change in the event of unforeseen class disruptions. We will modify this schedule as time goes by.

Date	No.	Topic
8/24/2023	1	Introduction to Course and PC Setup + "As-a-Service" models & The Cloud
8/31/2023	2	Power BI Desktop Orientation and Data Source Connections
9/7/2023	3	Dashboard Design Theory, Visualizations, and Themes + Principles for Data-Driven Decision Making
9/14/2023	4	Introduction to DAX and M – Columns, Measures, Tables
9/21/2023	5	Data Models and Relationships + Table Joins
9/28/2023	6	Working with Time Intelligence
10/5/2023	7	Putting It All Together + Quiz #1 Prep
10/12/2023	8	**Quiz #1**
10/19/2023	9	Advanced DAX and M – Part 1 + Intro to Final Project
10/26/2023	10	Advanced DAX and M – Part 2
11/2/2023	11	Power BI Web Application, Natural Language Query, Mobile App + "interview" with final project SME
11/9/2023	12	Limitations, Licensing, and Usage Analytics + Quiz #2 Prep
11/16/2023	13	**Quiz #2**
11/23/2023	14	*Thanksgiving Break*
11/30/2023	15	**Final Project Due**