The University of Texas at Dallas

Course Syllabus – Spring 2024

Course Information

Course Number/Section	BUAN6335.502.24S/SYSM 6335.502.24S
Course Title	Organizing for Business Analytics Platforms
Term	Spring 2024

Professor Contact Information

Professor	Mandar Samant
Email Address	mandar.samant@utdallas.edu
Days and Times	Tuesday, 7 PM- 945 PM
Classroom	ECSS 2.203
Exam Dates	Final Exam: May 7th 2024
Office Hours	By Appointment
Office Location	MS Teams

Teaching Assistant Contact Information

Teaching Assistant	Rimsha Tahir
Email Address	rimsha.tahir@utdallas.edu
TA Office Hours	TBD (MS Teams)

Course Modality and Expectations

E-learning portal will be our primary point of entry to access the virtual classroom, access content (lecture notes, slides, videos, assignments, et al), look out for communications from us or view grades.

Duration	Course Modality
January 16- May 16 2024	Classes during this time, unless there is a change in the modality enforced by the University, will be strictly in-person and attendance will be enforced. Students are expected to attend classes during this time and an online option will not be provided. If students do not attend classes in-person, they will not receive attendance credit for that week. Attendance constitutes 7% of your final grade and attendance will be calculated proportionally based on the number on the number on face-to-face classes offered during this semester.

Course Pre-requisites, Co-requisites, and/or Other Restrictions

Introduction to foundational cloud technology concepts is preferred.
Beginner proficiency in any of the programming languages such as, but not limited to, Python, Java, C# or similar is preferred.
Beginner hands-on/knowledge in SQL is preferred.
More importantly, willingness to participate in class discussions and team projects is required.

Course Description

The course develops conceptual understanding of platforms for business analytics and key business drivers that lead to business initiatives. The course examines how decision-makers in key functional areas of an enterprise rely on data teams, how teams identify and develop analytical and engineering techniques to solve business problems, and how data analytics platforms are adopted successfully. The course also emphasizes the development of business cases for strategic analytics initiatives and discusses best practices for descriptive, predictive, and prescriptive analytics.

Student Learning Objectives/Outcomes

Upon completion of this course, the student will be able to:

- Learn the key elements leading to challenges and success building data practice
- Gain holistic understanding on data analytics domain, roles, best practices, trends, tools, and frameworks
- Explore and gain foundational knowledge of cloud data platforms for data analytics and machine learning toolset
- Understand and discuss new business and technology trends in the data paradigm
- Understand how businesses manage analytics projects and platforms

Required Textbooks and Materials

None

Audio recordings, slides that might be needed in the course would be made available in elearning portal. eLearning will be used as the central platform to provide access to class content (e.g., class slides and assignment descriptions) and the recording of grades. All announcements (e.g., change in assignment dates) will be posted in eLearning and will be sent to the student email on record in eLearning. It is the students' responsibility to regularly check their UT Dallas email accounts and review the Announcements page in eLearning.

Required Materials

You will need a laptop from the first day of class. While any operating system is fine, it is recommended that the laptop have at least 8GB of ram and about 100MB hard disk space available.

For business case study assignments (group projects and individual assignments), you will also need to purchase HBR course pack. Stay tuned for specific case studies to be posted in the syllabus/eLearning portal.

Technical Requirements

In addition to a confident level of computer and Internet literacy, certain minimum technical requirements must be met to enable a successful learning experience. Please review the important technical requirements on the Getting Started with eLearning webpage.

Lecture Preparation

All assigned lecture preparation is to be completed before class on the date the content will be covered in the lecture. Generally, the preparation materials will be available and/or listed in the Course Schedule on eLearning approximately a week before the lecture.

Lecture Session Guidelines

- Students are expected to be present, attentive, engaged, and participative during lectures.
- Students are expected to have a laptop open in class to enable participation in exercises and activities.
- Lectures will start on-time and most often will use the entire class-time duration.
- Students are responsible for all materials covered in a lecture, irrespective of their attendance. Neither the TA nor the instructor are required to cover lecture content one- on-one for students missing lectures.

Academic Calendar

This is a **tentative** class schedule; changes to the schedule will be posted in eLearning. The following gives a tentative outline and sequence of the topics to be covered or the activities to take place (exams or assignments) in these meetings. Assignments are due at the beginning of class; for example, an assignment due in Class 2 should be submitted through elearning before the start of Class 2. Agenda, topics and homework for each meeting will be posted before the class or shortly after the class.
Highlighted (yellow) aspects below depict student deliverables and active participation opportunities.

BUAN 6335.502.S24 (Tuesday, 7:00 pm-9:45 pm)				
Week	**Dates**	**Class Topic**	**Details**	**Student Deliverables**
1	**01/16**	Course Overview	• Greetings! Introductions! • Syllabus Overview • Data Initiatives and challenges	• Review syllabus
2	**01/23**	• Data Life Cycle Overview • Elements of Data • Data Pipelines Introduction	• Discuss: Data Analytics, Data Engineering and Data Science • Critical Elements of cloud data ecosystem • Compare the top cloud data offerings.	
3	**01/30**	• Design Principles of Data Pipelines	• Connecting Business Outcomes to technology stack • Storage - Critical Scenarios and Qualification Criteria • How to design, scale and Secure Data pipelines	
4	**02/06**	• Big Data Architectures and Patterns	• Overview of Modern Big Data Architectures and Patterns • Use cases of Big Data • How Big data shaped business models and enteprtises **Read and Debate: HBR: Case 1: Uber Pickup Efficiency**	**Individual Paper 1 Submission on eLearning Portal**
4	**02/13**	• Ingesting and preparing the data	• Types of ingestions • Questions to answer while making Ingestion decisions • Best practices **Read and Debate: HBR: Case 2 Disney +**	

5	**02/20**	• Address the Velocity of big data problems	• Processing Big data • Criteria to address velocity and load	**Individual Video Presentation 1 Submission**
6	**02/27**	• Data Lake • Data Warehouse • Data Lakehouse	• Key Aspects fo building a data lake • Is Data lake necessary in every data solution ? • Data Warehouse essentials • **Case Study 3 Discussion: Building CDP with Cloud Data Platfrom like AWS**	
7	**03/05**	• HBR introduction • Streaming discussions Case study and architecture discussion	• Real time Data processing • **Case study 4 discussion: Creating data strategy roadmap**	**Individual Paper 2/Video Presentation Submission**
March 11-17, 2024: Spring Break				
8	**03/19**	• Machine Learning, Depe Learning, CNN, AI, Gen AI Introductions	• Need for machine learning • Where does machine learning really helps ? • Machine Learning: **Discussion of various use cases w.r.t different business verticles**	
10	**03/26**	• Natural Language Processing	• Core Concepts: Natural Language Processing • GPT, Meta Llama and other LLMs • **Read and Debate: Case 5: AirBnB Unstructured data wisdom**	
11	**04/02**	• Gen AI : Industry Adoption	• **Read and Debate: HBR: Case 6: OpenAI and LLM** • Generative AI Use cases • Skillsets that industry needs	
12	**04/09**	**Cases to be Presented and Debated**	**Case 7: IBM Watson AI** **Case 8: Accelerating AI- Airforce** **Case 9: To Cach a Thief** **Case 10: Apple or similar**	**HBR Case – Group Presentations and Report to be submitted on eLearning**

13	**04/16**	• Data Privacy and Security	• **Discuss Data privacy scenarios and respective cases/incidents.** • **Discussion in Class: Case 11 – Facebook : Data Privacy and GDPR**	
14	**04/23**	**Group Project Presentations**	• **Group 1-5**	• **Submission for Project PPT and paper**
16	**04/30**	**Group Project Presentations**	• **Group 6-10**	• **Submission for Project PPT and paper**
17	05/07	• **Final Exam**	• **Final Exam**	

Projects, Labs and Assignment Guidelines

- Information related to assignments, labs, and projects will be posted in eLearning as they are assigned. Labs, assignment and project-specific scoring criteria (rubric) will be included with the assignment/project instructions.
- Project/Labs related milestones are typically due 1-3 weeks after they are assigned. Projects are to be submitted in eLearning and before the time specified by the instructor. Submissions via email will not be accepted unless specifically requested that way. Usually, multiple submissions will be allowed with ONLY the last submission graded.
- All individual assignments/project milestones must be submitted an evening before our class schedule unless specified. Late assignments will be gauged based on step down grade (From B an below and not as compared to A).
- Each student is expected to do their own work on the assignments. Working on assignments together or in groups, copying another student's work or computer files, or having another person do your work is scholastic dishonesty and will be addressed via the academic dishonesty processes of the University.
- Written assignments must adhere to the APA style guide of formatting, citing, and referencing.
- Exams and quizzes will be administered in the classroom where we usually meet and during the same times as your lectures. Test center rules will be strictly observed, including taking breaks after the exam has started. No unscheduled breaks will be permitted. More details will be shared as we approach the exam dates. If the university guidelines change during the time exams are scheduled, adjustments may be made and communicated to the students.
- The exams may consist of multiple choice, multiple-answer, fill-in-the-blank, scenario based or short essay questions. The final exam is not comprehensive.
- No extra credit assignments are available. Absolutely no exceptions here.
- General grading criteria can be found in eLearning. Assignment specific grading criteria will be included with the assignment instructions.
- All group assignments/Case Studies will need to be submitted via eLearning. I do not accept assignments via email. If you submit an incorrect assignment or need to resubmit your assignment in

eLearning you will be allowed to resubmit two more times (total three attempts), as long as it is before the due date. You will be granted three attempts to resubmit the assignment before the due date and this will be automatically available to you in e-learning when the assignment is created by the instructor. Peer evaluations for group projects shall be submitted only once. Late group assignments will be eligible for 10% score penalty for the specific assignment.

Grading Policy

This course will feature a mix of activities and written and verbal assignments that may be in class or on campus. Homework will include readings from the text, assignments, and activities that usually require the student to complete some type of task. The instructor will provide detailed instructions as well as the grading criteria for each assignment. Please consult the course schedule for deadlines. Please be advised that if you have a question or issue with your assignment grade, your entire assignment is subject to re-grading, and it could lead to addition or deduction of points.

Grading Scheme

Grading Milestones	Points
Individual milestone 1: Paper	100
Individual milestone 2: Video Presentation	100
Individual milestone 3: Paper or Video Presentation	100
Group Participation Evaluation	100
Group: HBR Case Study Report and Presentation	200
Group: Final Project	200
Final Exam	100
Attendance	50
Class Participation	50
Total	**1000**

The following table provides more details on grade ranges:

Final Point Total	Letter Grade
A	94-100
A-	91-93
B+	87-90
B	83-86
B-	80-82
C+	77-79
C	73-76
F	72 & below

Course Policies

eLearning will be used for class content (e.g., class slides, assignment descriptions, etc) and the recording of grades. Slides will be posted in before the class is held. Class announcements (e.g., change in assignment dates) will be sent to the student email on record in eLearning via a class announcement or course message. It is the students' responsibility to regularly check their email accounts and announcements/ course messages on elearning.

Class Materials

The instructor may, at their discretion, provide class materials that will be made available to all students registered for this class as they are intended to supplement the classroom experience. These materials may be downloaded during the course, however, these materials are for registered students' use only. Classroom materials may not be reproduced or shared with those not in class, or uploaded to other online environments except to implement an approved Office of Student AccessAbility accommodation. Failure to comply with these University requirements is a violation of the Student Code of Conduct.

Instructor Response Policy: The instructor will respond to all student inquiries (emails, voice messages, etc.) within 48 hours (excluding holidays and weekends).

Class Participation/ Attendance Policy: This class incorporates a lot of in-class activities and discussions. It is highly recommended that you attend the lectures to gain the most out of the class. If you participate in the in-class activities, your understanding of the topic under discussion will be greatly enhanced.

Attendance will be calculated proportionally based on the number on the number on face-to- face classes offered during this semester. Absence due to COVID-19 will not be counted against a quarantined student. Instructor approved absences for valid reasons will not be counted against a student.

Class Recordings

The course emphasizes in-class learning. However, the instructor may record meetings of this course. These recordings will be made available to all students registered for this class if the intent is to supplement the classroom experience. 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.

Students are expected to follow appropriate University policies and maintain the security of passwords used to access recorded lectures. Unless the Office of Student AccessAbility 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 AccessAbility accommodation. Failure to comply with these University requirements is a violation of the Student Code of Conduct.

Late Work: All assignments are due at the beginning of class (not during and not after), on the specified date. I do not accept late assignments unless prior arrangements have been made with me. No exceptions. No extra credit or make up work will be given. If there are genuine/ extenuating circumstances, I will make exceptions on a case-to-case basis.

Academic Integrity: The University is committed to academic excellence and expects academic honesty from all members of the University community and believes that it is essential for academic excellence and integrity. Academic honesty includes adherence to guidelines established by the instructor in a particular course for both individual and group work. It prohibits representing the work of others to be one's own (plagiarism); receiving unauthorized aid on an assignment (cheating); and using similar papers or other work products to fulfill the obligations of different classes without the instructor's permission. Penalties for academic dishonesty may include a grade of "F" on the work in question or for the course. In addition, any student engaged in academic dishonesty will be subject to disciplinary action. Please refer to the General Polices website (see below) for detailed information pertaining to academic dishonesty, including procedures for determining disciplinary action.

WORKING TOGETHER on Individual Assignments: This course will have a considerable amount of solving interesting assignments. Each student, is expected to do their own work on the "individual" assignments. Copying another student's work (computer files) or having another person do your work is scholastic dishonesty and will be dealt with accordingly.

Makeup Exams: I do not give make-up exams unless a student presents convincing proof of conditions that prevent him/her from taking the exam at the scheduled time.

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 see http://go.utdallas.edu/academic-support-resources.

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 review the catalog sections regarding the credit/no credit or pass/fail grading option and withdrawal from class.

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.