ITSS 4355.001: Data Visualization

Class Information

Term	Fall 2023 [Jan 16– May 10]
Course Number	ITSS 4355.001
Class Meetings	Thursday 4:00 PM – 6:45 PM
Classroom	SOM 1.107

Instructor Information

Instructor	Dr. Prajakti Akarte
Email	prajakti.akarte@utdallas.edu *Please include the course number and section number in all email correspondence. Please use your UTD e-mail system for any communication with the instructor/TA.*
Office Location	JSOM 3.708
Office Hours	Office Hours: Tue: 12:00 PM – 2:00 PM or by appointment *For questions related to Homework/Grading, please contact TA (below)*
TA Information	TBD

Course Information

Course Description	ITSS 4355: Data Visualization (3 semester credit hours) This course focuses on how to leverage new decision support technologies to improve organizational decision making. Students will explore various data visualization tools and review the foundational principles that guide their use.
Course Objectives / Outcomes	Student Learning Objectives: 1. Provide students with an understanding of the principles of descriptive and exploratory data visualization. 2. Provide students with visual tools for solving business problems. 3. Provide students with the ability to compose data stories for effective corporate communication of analytical insights. Student Learning Outcomes: 1. Students will be able to acquire, parse, and manipulate data sets 2. Students will be able to create publishing quality data visualizations from base data sets 3. Students will be able to use exploratory data visualization as an analytical tool for business 4. Students will be able to compose data narratives using data visualizations.
Pre-requisites	(ITSS 3312 or ITSS 4381) and ITSS 4300 and ITSS 4351. (3-0) Y

Course Materials

Recommended Textbook(s) & Materials	***Recommended Text****: Data Visualization: Exploring and Explaining with Data by Jeffrey D. Camm, James J. Cochran, Michael J. Fry, Jeffrey W. Ohlmann, 1ˢᵗ edition, Cengage, ISBN: 978-0357631348 ***Tools:*** *MS Excel, Python, R,* Tableau *(Instructions and links for download/installation are available on eLearning Portal)* All course materials (lecture slides, handouts, data spreadsheets etc.) will be made available on eLearning. Students are responsible to check eLearning regularly to access course materials. Students are required to have a laptop for use in every class.
Laptop/ Software Requirements	This course is hands-on with many in-class examples and exercises. Students are required to install tools/software on their laptops and bring to each class.

Grading Policy

Grading Policy	This course will feature a mix of written and verbal assignments. The instructor will provide detailed instructions as well as the grading criteria for each assignment. Please consult the course schedule for deadlines. Your final grade will be based on the total score of the following: Attendance / In-class participation: 10% Assignments: 20% (5% for each of the 4 assignments) Quizzes: 20% (4% each of the 5 quizzes) Midterm Exam: 20% Final Exam: 20% Final Individual Project: 10% Note: (1) Please review submission instructions carefully; two separate submissions may be needed: (i) Turnitin – to check duplication/plagiarism, and (ii) normal submission. Use Google Chrome for uploading assignments.

Final Grading Scale

Letter Grade	Final Point Total
A	>=97.00-100.00
A-	>= 93.00-96.99
B+	>= 89.00-92.99
B	>= 85.00-88.99
B-	>= 81.00-84.99
C+	>= 77.00-80.99
C	>= 73.00-76.99
C-	>= 69.00-72.99
D+	>= 65.00-68.99
D	>= 61.00-64.99
D-	>= 57.00-60.99
F	56.99 & below

Course and Instructor Policies

Attendance	**ATTENDANCE IS REQUIRED**. Attendance will be taken during each class. In-class participation in all classes is extremely important to achieve maximum success. Attending the class gives you an opportunity to interact with your professor and your fellow students. Students who fail to participate in class regularly will likely face scholastic difficulty. **YOU MUST BE PRESENT IN THE CLASS TO TAKE THE EXAMS AND QUIZZES**. **NO MAKE-UP EXAMS WILL BE PROVIDED.**
Absence due to COVID-19	Students need to self-report COVID-19 positive results or exposures via an online form. Students should not attend class until cleared by campus tracers.
Class Recordings	No in-class recordings for the traditional instruction mode
Exams and Proctoring	All exams are scheduled well in advance. If you miss an exam, you will be given a zero! There are no makeup exams. ***If you have a legitimate, non-academic reason for missing an exam, you must provide verifiable documentation at least 24 hours BEFORE the day of the exam.*** If you contact me AFTER the exam, it is considered missing the exam. Points will be deducted if you arrive late to the exam. You must take the exam within 15 minutes of the scheduled start time. To maintain required academic integrity of this course, examinations may require the use of a widely used proctoring service, for online assessment proctoring, using the UTD testing center, and/or in-class exam proctoring.
Lockdown Browser / Honorlock	The use of Lockdown browser / HONORLOCK may be required. More information will be provided before the Exam.
eLearning	eLearning will be used for class content (e.g., class slides and assignment descriptions) and the recording of grades. Slides will be posted before class is held. Class announcements (e.g., change in assignment dates) will be sent to the student email on record in eLearning. **IT IS THE STUDENTS' RESPONSIBILITY TO REGULARLY CHECK ELEARNING AND THEIR UTD EMAIL ACCOUNTS.** Please ensure that you have good internet connectivity.
Communications and Instructor Response Policy	For questions related to the course material, assignments. quizzes, exams, scores and grades, please use class sessions, office hours, and discussion forums. For other matters, *send an E-mail using UTD email system for incoming and outgoing messages. (Using your personal email address is STRONGLY discouraged, due to security and spam blocking concerns).* The instructor will respond to student inquiries through email within 48 business hours (excluding holidays and weekends). Students should adhere to business professional style of communication and must use their UTD email for correspondence.
Assignments	Written assignments must adhere to the APA style guide of formatting, citing, and referencing. Descriptions of assignments will be posted as they are assigned. All assignments will be submitted via eLearning. *Assignments submitted by email will not be accepted.* If you submit an incorrect assignment or need to resubmit your assignment in eLearning you will be allowed to resubmit as long as it is before the due date. Send an email to the TA at least 12 hours prior to the due date to clear your submission. Upon doing so, you will be able to resubmit. Inquiries related to late submissions will not be entertained.

Clarifications / Inquiries regarding Assignments	You must review each assignment (and download required files) as soon it is posted. Each assignment will be explained in detail in the class. It is your responsibility to make sure that you understand all the instructions. If you still have questions or need clarifications about the assignment, you MUST post queries on the discussion board by the date specified in the assignment. You can also seek clarifications from the instructor TA during their office hours. **Please do not wait for the last moment to seek clarifications.** A penalty of 20% will be imposed if you seek clarifications within 24 hours of the due date/time.
Assignment Grading	Please be advised that if you have a question or issue with your assignment grade, contact the TA within "one week" of grade posting. Your entire assignment is subject to re-review (re-grading) which may or may not result in additional points. *No inquiries regarding grades will be entertained after <u>one week</u> from the date of grade posting.* General grading criteria can be found in eLearning. Assignment-specific grading criteria will be included with the assignment instructions. You will lose points for not following instructions.
Late Work / Submissions	All assignments are due on the specified date. Please give yourself sufficient time to upload assignments on the eLearning Portal/Turnitin. **You would not be able to submit/upload if the due date is passed**. You will be graded only on what is submitted on the portal. No late assignments will be accepted unless prior arrangements have been made with the instructor in which case a penalty of 25% per day (including weekends) will be assessed. Only one such exemption is allowed in the entire semester. Deadlines in the professional world are not a moving target. Missed deadlines affect product delivery, professional reputation, and revenue. **Please plan accordingly**. For these reasons, late work or incomplete work is not acceptable in this course EXCEPT in the most extreme and unlikely circumstances (see below) – in which case, e-mail the evidence of extreme circumstances to me/TA at least 24 hours prior to the due date (Penalty will apply). **Rule: You will be graded only on what is submitted on time.** Ensure that you have enough time to deal with potential technical glitches that may arise at the last moment. Inquiries related to late submissions will not be answered / entertained.
Exceptions for Late Work due to Server Unavailability or other Technical Difficulties	Exceptions: The University is committed to providing a reliable learning management system to all users. However, in the event of any unexpected server outage or any unusual technical difficulty which prevents students from completing a time sensitive assessment activity, the instructor will provide appropriate accommodation based on the situation. Students should immediately report any problems to the instructor and also contact the online eLearning Help Desk. The instructor and the eLearning Help Desk will work with the student to resolve any issues at the earliest possible time.
Extra Credit	**There is no extra credit.**
Final Course Letter Grades	Final course letter grades are based solely on your performance on the graded assignments, exams, projects, and/or attendance. No bonus points, extra credit, or additional assignments are offered. <u>*Do not*</u> assume that final grades will be rounded to the nearest whole number. No inquiries regarding "rounding up" will be entertained.
Classroom Conduct	**Class discussions, questions, and enthusiasm about the course material are highly encouraged**. Please engage in class discussions. I do ask that you are respectful during class, be respective to your peers who are part of the learning environment. This means no talking to other during class presentations, *silence your cell phone and do not take calls inside the classroom while class is in session.*

Discussion Board	Students are encouraged to use discussion boards to post questions / comments related to topics in this course.
Student Code of Conduct	For information related to "Student Code of Conduct", please go the website: https://conduct.utdallas.edu/
Academic Integrity	**DO NOT CHEAT and DO NOT PLAGIARIZE**. All homework and exams are to be individual efforts. You are not to collaborate with other students, or to discuss homework or assignments with other students prior to submission. *Copying homework, assignments, or exams, in whole or in part, from other students or from assignments from previous semesters will be considered to be an act of academic dishonesty. Cases of cheating / plagiarism will be referred to the University Authorities for action.* All work should demonstrate the same professional and ethical standards expected of you in the workplace, including proofreading and editing carefully all work you submit in class. Professionalism and personal responsibility mean that you use appropriate source citations so that you avoid violations of copyright and academic honesty, even if those violations are inadvertent. The University is committed to academic excellence and expects academic honesty from all members of the University community. Academic honesty includes adherence to guidelines established by the instructor 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. Any student engaged in academic dishonesty will be subject to disciplinary action. All cases of academic dishonesty will be reported directly to Judicial Affairs. **My recommendation for acts of academic dishonesty will be an F in the course**. The importance of academic honest and my recommended sanctions are emphasized during class, in emails, and on the exams and assignments.
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."*
University Policies & Procedures	For information regarding general University policies and procedures, please go to http://go.utdallas.edu/syllabus-policies. These policies include the following: - Technical Support - Field Trip Policies, Off-Campus Instruction and Course Activities - Student Conduct and Discipline - Academic Integrity - Copyright Notice - Email Use - Withdrawal from Class - Student Grievance Procedures - Incomplete Grade Policy - Disability Services - Religious Holy Days - Avoiding Plagiarism - Title IX - Campus Carry

Course Modality

Instructional Modes	Traditional Classroom /Laboratory; (In-person, Face-to-Face). Not recorded
eLearning and Course Platforms	This course can be accessed using your UT Dallas NetID account on the eLearning website. Please see the course access and navigation section of the Getting Started with eLearning webpage for more information. To become familiar with the eLearning tool, please see the Student eLearning Tutorials webpage. **Announcements, written lecture materials, assignments and grades will be posted in the course's eLearning site. IT IS THE STUDENTS' RESPONSIBILITY TO REGULARLY CHECK THEIR UTD EMAIL ACCOUNTS AND THE ELEARNING PAGE FOR THIS COURSE.** Microsoft TEAMS may be utilized for lectures and other live communications. If any, recorded (and annotated) lectures and other communications will be available on Microsoft TEAMS, as well Active links to TEAMS will be available in the eLearning web site. 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. UT Dallas provides eLearning technical support 24 hours a day, 7 days a week. The eLearning Support Center includes a toll-free telephone number for immediate assistance: (1- 866-588-3192), email request service, and an online chat service.
Technical Requirements	Please review the important technical requirements on the Getting Started with eLearning webpage.
COVID – 19 Guidelines and Resources	The information contained in the following link lists the University's COVID-19 resources for students and instructors of record. Please see http://go.utdallas.edu/syllabus-policies. For hybrid/blended courses, UT Dallas strongly suggests that all students wear a face covering that covers the nose and mouth in all university buildings and classrooms. IF YOU ARE EXPERIENCING SYMPTOMS, PLEASE DO NOT COME TO CAMPUS. Anyone attending class in person exhibiting active symptoms may be asked to leave. Students who are unable to comply with the university should consult the Comets United webpage for further instructions. Students who have tested positive for COVID-19 or may have been exposed should not attend class in person and should instead follow required disclosure notifications as posted on the university's website (see "What should I do if I become sick?" webpage). In-person participation records may be used to assist the University or local public health authorities in performing COVID-19 occurrence monitoring. Please note – in-person attendance requires consistently adhering to University requirements. Failure to comply with these University requirements is a violation of the Student Code of Conduct. To help preserve the University's in-person learning environment, UT Dallas recommends the following: Adhere to the University's CDC Updated Guidelines on July 30, 2021. All Comets are strongly encouraged to wear face coverings indoors regardless of vaccination status.
Accommodations for Students Who Must Isolate Due to COVID – 19	University requires students who test positive for COVID-19 or who are close contacts as determined by the campus contact tracing program to isolate or quarantine as applicable.
Student Resources for COVID-19	Students who have tested positive for COVID-19 or may have been exposed should not attend class in person and should instead follow required disclosure notifications as posted on the university's website (see "What should I do if I become sick?")

Course Schedule, Assignments, and Due Dates

This is a _TENTATIVE_ class schedule. *Instructor reserves the right to make changes to the content and schedule*. Changes, if any, will be announced in the class as well as posted on eLearning portal. It is the student's responsibility to keep track of them.

Class No. (Date)	Description	Book Chapter	Assignment (Due Date)
1 (1/18)	Course Introduction, Syllabus and Roadmap; Download / Install Tools and Software		
2 (1/25)	Introduction to Data Visualization, Process of Business Decisions Making and Visual Communication; **Syllabus Quiz**	Camm – 1.1 – 1.4, Class Notes	
3 (2/1)	Data Foundations and Types of Charts I; **Quiz 1**	Camm – 2.1-2.8, Class Notes	**Assignment 1**: Due: 2/15
4 (2/8)	Data Foundations and Types of Charts II	Camm – 5.1-5.4, Class Notes	
5 (2/15)	Data Visualization and Design Principles I; **Quiz 2**	Camm – 3.1 – 3.5, Class Notes	**Assignment 2: Due 3/7**
6 (2/22)	Data Visualization and Design Principles II; Review: Midterm Exam	Camm – 4.1-4.4, 6.1-6.6, Class Notes	
7 (2/29)	**MIDTERM EXAM**		
8 (3/7)	Data Storytelling: Explaining Visually to Influence with Data	Camm – 7.1 - 7.4; Class Notes	**Assignment 3: Due: 3/28**
9 (3/14)	**No Class – Spring Break**		
10 (3/21)	Introduction to Data Dashboards; **Quiz 3**	Camm – 8.1-8.5	
11 (3/28)	Understanding context and building meaningful dashboards	Class Notes	**Assignment 4: Due: 4/11**
12 (4/4)	Advanced Visualization Techniques I; **Quiz 4**	Class Notes	
13 (4/11)	Advanced Visualization Techniques II	Class Notes	
14 (4/18)	Putting it together: Data Visualization Best Practices; Final Exam Review; **Quiz 5**	Camm – 9.1 – 9.4	
15 (4/25)	**FINAL EXAM**		
16 (5/2)	**FINAL INDIVIDUAL PROJECT DUE**		**Due: 5/2**