



ITSS 4353/OPRE 4353 Business Analytics

Class Information

Term	Fall 22: [Aug 22 – Dec 8]
Course Number	ITSS 4353.001/OPRE 4353.001
Class Meetings	Thursday 1:00 PM – 3:45 PM
Classroom	JSOM 2.717

Instructor Information

Instructor	Dr. Prakash Shrivastava
Office Phone	972-883-5901
Email	Prakash.shrivastava@utdallas.edu <i>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.</i>
Location and Office Hours (Virtual)	Office Location: JSOM 3.225 Office Hours (Online): Wed: 10:30 AM – 12:00 PM; Appointments are encouraged. Send me an e-mail 24 hours in advance to set up a remote session (in Teams). For questions related to Homework/Grading, please contact TA (below)
TA Information	TBD

Course Modality

Instructional Mode	Traditional Classroom /Laboratory; (In-person, Face-to-Face). Not recorded
eLearning and Course Platforms	<p>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.</p> <p>The course will utilize the following platforms:</p> <ul style="list-style-type: none">• 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 maybe 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 <p>Active links to TEAMS will be available in the eLearning web site.</p> <p>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.</p> <p>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. The course will be</p>

	delivered “in-class” using Blackboard Collaborate. Please make sure you are able to access and use eLearning / Blackboard.
Asynchronous Learning	There is no provision for Asynchronous Learning. Lectures will not be recorded. All students are expected to attend all classes “in person.”
Technical Requirements	Please review the important technical requirements on the Getting Started with eLearning webpage.
COVID – 19 Guidelines and Resources	<p>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)</p> <p>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.</p> <p>To help preserve the University’s in-person learning environment, UT Dallas recommends the following:</p> <p>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.</p>
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 Information

Course Description	ITSS 4353 – Business Analytics (3 semester credit hours) This course will introduce various data mining analytical techniques to extract business intelligence from firms' business data for various applications, including supervised and unsupervised learning analytic techniques, association, customer segmentation, classification, customer relationship management (CRM), personalization, online recommendation systems, and web mining. Students will also be exposed to various business intelligence software such as JMP PRO 16, Python, XLMiner, or SQL Server (depending on availability)
Course Objectives / Outcomes	<ol style="list-style-type: none"> 1. Gain ability to formulate business problems and determine data requirements 2. Learn data preparation and exploration methods 3. Understand Visual Analytical methods for business intelligence 4. Become knowledgeable in basic analytical techniques (segmentation, affinity analysis, prediction, classification) and application in CRM and SCM 5. Become familiar with commercial tools for Analytics (e.g., JMP, Tableau, XLMiner) and (if time permits) with open-source tools (R, Python)

Prerequisites	ITSS 3312 and (MATH 1326 or MATH 2414 or MATH 2419 or OPRE 3340) and (CS 2305 or MATH 2418 or MATH 2333 or OPRE 3333). (Same as OPRE 4353) (3-0) T
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Course Materials

Required Textbook(s) & Materials	<p>Books:</p> <ol style="list-style-type: none"> Business Analytics by Jeffrey Camm, 4th edition, Cengage, ISBN: 978-0-357-13178-7 Building Better Models with JMP Pro, by Jim Grayson, SAS Press, ISBN: 978-1-629-59056-8 <p>Tools: Excel, JMP Pro 16, Tableau (Instructions and links for download/installation are available on eLearning Portal)</p>
Laptop Computer	This course is hands-on with many in-class examples and exercises. Students are required to install tools on their laptops and bring to each class.

Grading Policy

Grading Policy	<p>This course will feature a mix of activities and 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:</p> <p>Attendance / In-class participation: (5%)</p> <p>Assignments (50%): [10% for each of the 5 assignments]</p> <p>Quizzes (15%): [3% each of the 5 quizzes]</p> <p>Exams: Exam – 1: 10%; Exam – 2: 20.0%</p> <p>(2-part exams: 1. Quiz and 2. Hands-on + quiz)</p> <p>Note: (1) Please review submission instructions carefully; <u>two separate submissions may be needed:</u> (i) Turnitin - to check duplication/plagiarism, and (ii) normal submission. Use Google Chrome for uploading assignments.</p>
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Final Grading Scale

Letter Grade	Final Point Total
A	>=93.00-100.00
A-	>= 90.00-92.99
B+	>= 87.00-89.99
B	>= 83.00-86.99
B-	>= 80.00-82.99
C+	>= 77.00-79.99
C	>= 73.00-76.99
C-	>= 70.00-72.99
D+	>= 67.00-69.99
D	>= 63.00-66.99
D-	>= 60.00-62.99
F	59 & below

Course and Instructor Policies

Attendance	Attendance is required. Attendance will be taken. 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. Attendance will be taken. You must be present in the class to take the exams and quizzes. No make-ups.
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	<p>All exams are scheduled well in advance. If you miss an exam, you will be given a zero! There are no makeups. 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.</p> <p>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.</p>
Lockdown Browser / Honorlock	I may require use of Lockdown browser / HONORLOCK. I will provide more information 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. 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 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 as 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 48 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 one week 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. I do not accept late assignments 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. Why? Deadlines in the professional world are not a moving target. Missed deadlines affect product delivery, professional reputations, 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 an 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, curves, extra credit, or additional assignments are offered. Do not assume that final grades will be rounded to the nearest whole number. No inquiries regarding “rounding up” is entertained.
Classroom Conduct	I strongly encourage class discussion, questions, and enthusiasm about the course material. Please engage in class discussions. I do ask that you are respectful during class, be respectful to your peers who are part of the learning environment. This means no talking to other during class presentations, silence your cell phone, don't take calls in class.
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 (Follow the Student Code	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 of homework,

<p>of Conduct: https://conduct.utdallas.edu/)</p>	<p>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.</p> <p>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 means 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.</p> <p>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.</p> <p>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.</p>
<p>Comet Creed</p>	<p><i>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:</i></p> <p>"As a Comet, I pledge honesty, integrity, and service in all that I do."</p>
<p>University Policies & Procedures</p>	<p>For information regarding general University policies and procedures, please go to http://go.utdallas.edu/syllabus-policies. These policies include the following:</p> <ul style="list-style-type: none"> ▪ 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 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.

Session / Date(s)	CONTENT (You must be present in the class for quizzes/exams)	Book Chapter	ASSIGNMENTS (Tentative Due Dates)
1 (8/25)	Course Introduction, Syllabus and Roadmap; Download / Install JMP Pro and Tableau		
2 (9/1)	Introduction to Business Analytics, Business Decisions and Data Sources; About Analytics using Excel, JMP, Tableau – Introduction; Syllabus Quiz (Multiple Attempts; You must get >= 90%)	Camm – 1.1, 1.2, 1.3, 1.4, 1.5	Assignment – 1: Descriptive Statistics (10%); Due: 9/15
3 (9/8)	Descriptive Statistics, Data Types, Univariate Analysis: Histograms; Practice: Excel / JMP; Quiz – 1 (3%)	Camm – 2.1, 2.2, 2.4	
4 (9/15)	Univariate Analysis: Box Plots, Percentiles, Normalization; Practice: Excel / JMP	Camm – 2.5, 2.6, 2.7	Assignment – 2: Bivariate Analysis (10%); Due 9/29
5 (9/22)	Bivariate Analysis: Covariance, Correlation Missing Data; Practice: Using Excel / JMP; Quiz – 2 (3%)	Camm – 2.8, 2.9	
6 (9/29)	Data Visualization / Visual Analytics (using Excel); Review for Exam – 1 Practice: Using Excel;	Camm – 3.1, 3.2, 3.3, 3.5 (Skip 3.4)	Assignment – 3: Adv Visualization (10%); Due: 10/20
7 (10/6)	Exam – 1 (Closed-book/notes): (Hands-on + Quiz) (10%)		
8 (10/13)	Advanced Visual Analytics using Tableau and JMP; Practice: Using Tableau and JMP;	Appendix after Chapter – 3	
9 (10/20)	K-Means Clustering using JMP Practice: Clustering Using JMP; Quiz – 3 (3%)	Camm – 5.1	Assignment – 4: Clustering and Association Rules (10%); Due: 11/3
10 (10/27)	Association Rules / Recommender System Practice: Using Excel;	Camm – 5.2	
11 (11/3)	Time Series Analysis. Prediction Performance Measures Practice: Using Excel; Quiz – 4 (3%)	Camm – 8.1, 8.2, 8.3, 8.5	Assignment – 5: Time Series and Regression (10%); Due: 11/17
12 (11/10)	Linear Regression Analysis; Practice: Using Excel/Tableau;	Camm – 7.1, 7.2, 7.3, 7.4, 7.5 (Multi colin)	
13 (11/17)	k-Nearest Neighbors; Classification Performance Measures; Practice: Using Excel; Quiz – 5 (3%)	Camm – 9.2, 9.4	
14 (11/24)	No Class – Thanksgiving / Fall Break		
15 (12/1)	Guest Lecture Review for Exam – 2; Practice using JMP		
16 (12/8)	Exam – 2 [Covers topics after Exam – 1]: (20%) (Hands-On + Quiz; Closed – Book, Closed Notes)		