University of Texas at El Paso
College of Business Administration

Quantitative Methods in Business
Spring 2021

1 Course Information

Course:	QMB 3301-001, CRN: 25798
Instructor:	Dr. Seyedmasood Dastan
Email:	sdastan@utep.edu
Office Hours:	Virtually via Blackboard T/TR 1:00 pm - 2:00 pm
	or by appointment
Required Text:	eTextbook: Business Analytics
	Publisher: Cengage Learning; 3rd edition
	Authors: Camm/Cochran/Fry
	ISBN: 978-0-357-68633-1
	Semester subscription to eTextbook
	(Cengage subscription webpage)
Time:	Optional Virtual sessions via Blackboard T/TR 9 am - 10:30 am
Prerequisite:	See Academic Catalog
Other Required Materials:	Students must have Respondus LockDown Browser and Monitor and access to a computer device, webcam, and internet (You can borrow a webcam or a computer from UTEP if you need one).

2 Catalog Description:

The primary goal of QMB 3301 is to develop students analytics skills to solve business problems for decision-making. The course focuses on building and solving business analytics model by using various well-referenced quantitative methods such as linear regression, and, forecasting among others.

3 Course Objectives:

At the end of this course, students will be able to:

1. Use spreadsheets for examining data and building decision models

2. Apply suitable traditional quantitative methods for both gaining insights from historical data as well as predicting possible future outcomes

3. Use Excel and SPSS for analyzing data

Note: SPSS is available to all students, faculty and staff. The students can download SPSS from the SPSS info page. SPSS will also be available in the COBA CALC lab computers. Students must contact helpdesk@utep.edu about downloading SPSS if they have any questions. Click here to get to The SPSS info page.

The students must ensure access to SPSS by the end of week 2.

4   Communication:

The primary method of communication regarding assignments, upcoming tests, and other class matters will be via **_Blackboard_**. Please make a habit of checking it on a regular basis.

The best way to reach me is via email. I will respond most rapidly to emails sent to sdastan@utep.edu, generally within 24 to 48 hours. Response time to BlackBoard course messages is longer, typically 48 to 72 hours. **I strongly prefer to communicate via emails rather than Blackboard course messages!**

We will not meet on campus, but I will still have office hours for your questions and comments about the course. My office hours will be held via Blackboard on Tuesdays and Thursdays from 1 pm to 2 pm.

5   Grading Policy:

5.1   Discussion board:

Participation in the discussion board activity accounts for 15% of your grade. I encourage you to write at least 150 words or more in your post in response to the provided guiding questions. You should also reply (at least 30 words for each response) to the entries of at least two of your classmates for each assigned discussion (unless noted otherwise). Refer to the discussion board and course content for further details on each assignment. **The deadline for postings is 11:59**

pm MST every Friday. Replies to classmates are due by 11:59 pm MST every Sunday (Excluding the second, fourth and the tenth week of the semester since there is no discussion board activity on those weeks).

You may need to use math symbols and formula in some of the discussions. In those situations, you can use Blackboard message toolbar MathType functionality (the square root symbol $\sqrt{}$).

5.2   Group assignment:

During the first two weeks of the semester, student can form their own groups of five. If you do not joined a group by the end of the second week, you must email me and I will pair you with others. Each group should choose a group facilitator who will be responsible for communicating with the instructor regarding the group, submitting the assignments, and reporting to the instructor about members participation in the group activity.

The group assignments (GA) account for 20 % of your grade. You have three weeks to complete each GA assignment. Like other assignments, there is no late policy and failing to submit the assignment on time will result in a grade of zero for the whole group.

5.3   Quiz:

At the end of each chapter, there will be a quiz that tests your comprehension of the chapter's contents. The deadline for quizzes is on Sundays at 11:59 pm of the week they are posted.

5.4   Exams:

There will be two exams worth 50% total of your final grade. The exams will use the blackboard lockdown browser with camera security. The exams will be posted from 12 am on the day of the exam until midnight on the same day (for a total of 24 hours). Students are free to complete the exam anytime during this time period. However, once they begin their exam, they have 180 minutes to complete it. Note that, Lockdown browser will not allow you to leave the exam environment or complete it later. Please plan ahead.

There will be absolutely no make-up exams. If you have a valid reason for missing one exam, then the exam will be dropped. Please notify me as soon as possible and provide the documentation of the emergency at the earliest possible time (A valid excuse is only applicable to one exam. If for

any reason, excused or not, you miss more than one exam, you will receive a grade of zero for the latter ones.).

Valid reasons for missing an exam include a documented medical illness that prevents you from taking the exam, a death in your immediate family, or a documented mandatory court date (Having a doctor appointment is not a valid excuse).

On the other hand, being confused about the exam date or time is NOT a valid reason for missing an exam. All valid reasons must be justified with documentation.

5.5 Grades:

Grades will be determined as follows:

- Group assignments - 20%

- Discussion boards - 15%

- Quizzes - 15%

- Midterm Exam - 20% (March 26)

- Final Exam - 30% (May 14)

There is no extra credit available in this class.

Letter Grade Distribution:

90 - 100%	A
80 - 89.9%	B
70 - 79.9%	C
60 - 69.9%	D
Below 60%	Not passing

All requests regarding course grade corrections (e.g., exams, assignments) must be submitted in writing within three (3) days after graded materials are returned, reviewed, and/or after grades have been posted in BlackBoard grade book. After that time, all grades and records become final.

Please note that all changes are at the sole discretion of the instructor. There will be no extra credit assignments for this course. **Do not contact me requesting additional assignments.**

6 Course Outline and Expectations

- This online course is designed to allow students to learn and study at their own time. Therefore, you must have the self-discipline to devote your time, energy, and focus on completing this course during the semester.

  This course requires students to read the textbook, watch and study videos, and perform several graded and ungraded activities weekly; reading and understanding each chapter covered during the semester is crucial to student success.

  An average of at least 8 hours per week should be devoted to this course; non-native English speaking students should expect to spend substantially more time to this course each week. Students requiring accommodation should communicate their needs to the university so that they can receive appropriate support.

- Students in online courses require several skills; students must display the characteristics of honesty, self-motivation, care, and duty and the ability to use technology to enhance the learning experience. This course is more quantitative-oriented than most undergraduate courses; ergo students must have the ability to understand the concepts covered in the textbook and to apply the concepts to real-world business cases.

- Reading the chapters every week and solving problems and exercises at the end of each chapter is one of the student's significant responsibilities during this course.

- To perform well on exams, students should read all assigned chapters thoroughly, watch the course lectures available on Blackboard, and work through all guided examples for each chapter.

- Exams become available at 12:00 am on the exam date until midnight the same day (24 hours). Students will have 180 minutes to complete the exams. To receive the full amount of time from taking each exam, be sure to start the exam several hours before the exam deadline

(posted in the course schedule). All exams are a closed book. **Students should not receive** **assistance from any person or from any other source.**

- The exams are strictly timed, and at the end of the allotted time, access to the exam will end. The exam clock will start the first time the student opens the exam. Students should ensure that before they access an exam that they have reliable access to the internet. I recommend that you come to campus to take the exams if you do not have access to reliable internet. The instructor cannot restart the exam clock, nor can students be given a second opportunity to take the exam. Plan ahead and be prepared.

7   Academic Honesty

Academic dishonesty is prohibited and is considered a violation of the UTEP Handbook of Operating Procedures. It includes, but is not limited to, cheating, plagiarism, and collusion. All exams must be your own work, and you may not use any external sources to receive answers. Cheating may involve copying from or providing information to another student, possessing unauthorized materials during a test, or falsifying research data on laboratory reports. Plagiarism occurs when someone intentionally or knowingly represents the words or ideas of another as ones' own. Collusion involves collaborating with another person to commit any academically dishonest act. Any act of academic dishonesty attempted by a UTEP student is unacceptable and will not be tolerated. All suspected violations of academic integrity at The University of Texas at El Paso will be reported to the Office of Student Conduct and Conflict Resolution (OSCCR) for possible disciplinary action. To learn more, visit the Handbook of Operating Procedures (HOOP): Student Conduct and Discipline. Proven violations of the detailed regulations, as printed in the Handbook of Operating Procedures (HOOP), and available in the Office of the Dean of Students, and the homepage of The Dean of Students (DOS) at www.utep.edu, may result in sanctions ranging from disciplinary probation, to failing grade on the work in question, to a failing grade in the course, to suspension or dismissal, among others.

All students are responsible for knowing and adhering to UTEP's Policy on Academic Honesty. For more information see → Academic Integrity and Scholastic Dishonesty

8 Technology Requirements

Course content is delivered via the internet through the Blackboard learning management system. Ensure your UTEP email account is working and that you have access to the Web and a stable web browser. Google Chrome and Mozilla Firefox are the best browsers for Blackboard; other browsers may cause complications. When having technical difficulties, update your browser, clear your cache, or try switching to another browser. All lecture videos and graded assignments will be completed through your web browser. To view the course PowerPoint slides, you will need to download Microsoft Office (for free) via UTEP's Microsoft Office Portal. Click the following link for more information about Microsoft Office 365 and follow the instructions. Lastly, students wishing to take full advantage of the live virtual office hours for this class should have access to a webcam and a microphone. IMPORTANT: If you encounter technical difficulties beyond your troubleshooting scope, please contact the UTEP Help Desk as they are trained specifically in assisting with students' technical needs. Please do not contact me for this type of assistance. The Help Desk is much better equipped than I am to assist you!

8.1 Respondus LockDown Browser and Monitor Requirement

This course requires the use of LockDown Browser and Respondus Monitor (webcam) for online exams. The webcam can be built into your computer or can be the type that plugs in with a USB cable. Watch this short video to get a basic understanding of LockDown Browser and Respondus Monitor (the webcam feature). A student Quick Start Guide (PDF) is also available.

8.1.1 Download Instructions

Click here to download the Lockdown browser, or reserve one with Equipment Checkout in the Library 300.

8.1.2 Once Installed

- Open LockDown Browser

- Log into Blackboard Learn

- Navigate to the test and begin

Note: You won't be able to access tests with a standard web browser. If this is tried, an error message will indicate that the test requires the LockDown Browser. Start the LockDown Browser and navigate back to the exam to continue.

8.1.3   General Guidelines

When taking an online exam that requires LockDown Browser and a webcam, remember the following guidelines:

- Select a location where you won't be interrupted

- Before starting the test, know how much time is available for it, and also that you've allotted sufficient time to complete it

- Turn off all other devices (e.g., tablets, phones, second computers)

- Clear your area of all external materials books, papers, other devices

- Remain at your computer for the duration of the test

- To produce a good webcam video, do the following:

  - Avoid wearing baseball caps or hats with brims

  - Ensure your computer or tablet is on a firm surface (a desk or table) not on your lap, a bed, or other surfaces that might move

  - If using a built-in webcam, avoid tilting the screen after the webcam setup is complete

  - Take the exam in a well-lit room and avoid backlighting, such as sitting with your back to a window

- LockDown Browser will prevent you from accessing other websites or applications; you will be unable to exit the test until all questions are completed and submitted.

9 Other Important Information

9.1 Withdrawal and Incomplete Policy:

Withdrawal and Incomplete Policy: A student may officially withdraw from this class in accordance with UTEP policy and within the UTEP academic calendar dates. Automatic withdrawals will NOT be made by the instructor. To be withdrawn from the class, students must take the appropriate actions on or before the university deadlines. The policy of the College of Business Administration is that INCOMPLETES are to be given only to students who need additional time to complete the specified assignments, and are typically only assigned in extreme circumstances with documentation. Incompletes WILL NOT BE GIVEN to those students who are not passing the course and wish to retake the course at a later date. It is your responsibility to know what the effect of a withdrawal will have on your academic standing, financial aid, scholarships, etc. International students are encouraged to go to the Office of International Program to discuss any schedule changes.

9.2 Students With Disability

The Center for Accommodations and Support Services (CASS) aspires to provide students with disabilities, accommodations, and support services to help them pursue their academic, graduation, and career goals. If you have a disability and believe you may need services, you are encouraged to contact the center to discuss your needs with a counselor. All discussions and documentation are kept confidential. Contact: Monday through Friday 8:00 am - 5:00 pm Phone: (915) 747-5148. Location: Union Building East Room 106. E-mail: cass@utep.edu

9.3 Attendance

Attendance in the course is determined by participation in the learning activities of the course. Your participation in the course is important not only for your learning and success but also to create a community of learners. Participation is determined by the completion of the following activities: Reading/Viewing all course materials to ensure understanding of assignment requirements Completing all Cengage online assignments. Completing all online exams administered through Blackboard.

10   COVID-19 PRECAUTIONS

You must STAY AT HOME and REPORT if you (1) have been diagnosed with COVID-19, (2) are experiencing COVID-19 symptoms, or (3) have had recent contact with a person who has received a positive coronavirus test. Reports should be made at screening.utep.edu. If you know of anyone who should report on any of these three criteria, you should encourage them to do so. If the individual cannot report, you can report on their behalf by sending an email to COVIDaction@utep.edu.

For each day that you attend campus (for any reason), you must complete the questions on the UTEP screening website (screening.utep.edu) prior to arriving on campus. The website will verify if you are permitted to come to campus. Under no circumstances should anyone come to class when feeling ill or exhibiting any of the known COVID-19 symptoms. Students are advised to minimize the number of encounters with others and to wear face coverings (nose and mouth) when in common areas or when others are present.

10.1   Syllabus

This syllabus contains important information about this class including exam dates, coverage of course material, class policies, and my contact information. Students are responsible for reading this syllabus and understanding the information contained in it.

10.2   Course Evaluation

Your constructive assessment of this course plays an indispensable role in shaping education at UTEP. Upon completing the course, please take the time to fill out the online course evaluation.

11   Sequential Schedule

The instructor will attempt to adhere to the course schedule below, but may alter course content, class assignments and activities as deemed necessary. The table below lists both course learning level (CLL) objectives and lesson learning level (LLL) objectives.

Regression (Jan 19 – Feb 21)	
CLL objective	Students will learn methods for both gaining insights from historical data as well as predicting possible future outcomes.
Learning objectives	(1) Recall hypothesis testing concepts. (2) Demonstrate understanding of the following topics: contrast between categorical and continuous valued independent variables (IDV), contrast between dependent variables (DV) and IDV, understand the difference between linear relationship and nonlinear relationship between DV and IDV. (3) Apply understanding of topics to build research hypotheses and construct regression models in Excel to solve the business problem. (4) Analyze regression results; examine hypothesis test results and model fit; draw inferences and find evidence to support generalizations for model implementation
Topics	Simple linear regression model – estimated regression equation
	Least square estimates of the regression parameters, use Excel chart tools
	Assessing the fit of simple linear regression model, the sums of squares, coefficient of determination, use Excel's chart tools
	Multiple regression model – estimated multiple regression equation; use Excel's regression tool to develop the regression equation
	Inference and regression – assumptions, testing individual regression parameters, addressing non-significant independent variables, multicollinearity, and inference in very large sample
	Categorical independent variables – interpreting the parameters and complex categorical variables
	Modeling nonlinear relationships – quadratic regression models, piecewise linear regression models, interaction between independent variables
Time Series Analysis and Forecasting (Feb 22 – Mar 14)	
CLL objective	Students will learn methods for both gaining insights from historical data as well as predicting possible future outcomes.
Learning objectives	(1) Recall concepts of time-series data from QMB2301. (2) Demonstrate understanding of different patterns in data, different forecasting methods, forecast accuracy. (3) Apply understanding of time-series forecasting topics to build various forecast models in Excel. (4) Analyze forecast accuracy results, compare and contrast various methods. (5) Evaluate which method is implementable.
Topics	Horizontal pattern, trend pattern, seasonal pattern, trend seasonal pattern, cyclical pattern, identifying time-series pattern
	Forecast accuracy
	Moving averages and exponentially smoothing
	Using regression analysis for forecasting – linear trend projection, seasonality, seasonality with or without trend, using regression analysis as a causal forecasting method, combining causal variables with trend and seasonality effects, considerations in using regression in forecasting
	Determining the best forecasting model
Mar 15 – Mar 21	***** Spring Break *****

Predictive Data Mining (Mar 22 – Apr 18)	
CLL objective	Students will learn a few advanced data mining methods in SPSS for extracting information from data and as well predicting possible future outcomes
Learning objectives	(1) Recall definition and goals of using data in various business situations from QMB2301, and data sampling and partitioning from regression project notes (2) Demonstrate understanding of sampling and partitioning data, accuracy measures of classification of categorical outcomes. (3) Build various classifiers in SPSS. (4) Analyze classification accuracy results, compare and contrast various methods. (5) Evaluate classification of categorical outcomes and estimate continuous outcomes with k-nearest neighbors.
Topics	Data sampling and partitioning
	Accuracy measures – evaluating classification of categorical outcomes & estimation of continuous outcomes, receiver operating characteristic (ROC) curve
	Logistic regression
	k-nearest neighbors – classifying categorical outcomes
Midterm Exam	**March 26**
Non-parametric Methods (Apr 19 – May 6)	
CLL objective	Students will learn to analyze qualitative data in SPSS.
Learning objectives	(1) Recall definition of qualitative variables from QMB2301. (2) Demonstrate understanding of the problems that need modeling qualitative data. (3) Build qualitative models using SPSS (4) Examine and analyze the results for making inferences. (5) Compare and contrast different inferences drawn from different models. (6) Compile information and create a managerial report.
Topics	Chi-square test for goodness of fit, Chi-square test for independence
	McNemar's test, Cochran's Q test
Final Exam	**May 14**