

University of Texas at El Paso

Woody L. Hunt College of Business

Business Stats and Analytics II Spring 2023

1 Course Information

Course: QMB 3301-04: CRN 22417
Instructor: Dr. Seyedmasood Dastan
Email: sdastan@utep.edu
Office Hours: MW 4:00 pm - 5:00 pm or by appointment
Office: Woody L. Hunt College of Business 227

Required Text: eTextbook: Business Analytics
Publisher: Cengage Learning; 3rd edition
Authors: Camm/Cochran/Fry
Semester subscription to eTextbook
([Cengage subscription webpage](#))

Time: MW 12:00 pm - 1:20 pm
Location: College of Business Admin 309

Prerequisite: See Academic Catalog

Other Required Materials: Students must have Respondus LockDown Browser and access to a computer device and internet.

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 3**.

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!**

5 Grading Policy:

Grades will be based on the weighted average for each assignment group. I do not use a points-earned system. Instead, each assignment is normalized, then the assignment category average is calculated, and finally each category is weighted accordingly to calculate the final grade. The weights associated with each assignment category are shown below:

- Quizzes - 15%
- Midterm Exam - 20% (March 22nd)

- Final Exam - 30% (May 12th)
- Regression Project - 20%
- Participation (in-class assignments) - 15%
- Weighted total - 100%

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, homework) 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 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](#)

7 Other Important Information

7.1 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.

7.2 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

8 COVID-19 PRECAUTIONS

Please stay home if you have been diagnosed with COVID-19 or are experiencing COVID-19 symptoms. If you are feeling unwell, please let me know as soon as possible, so that we can work on appropriate accommodations. If you have tested positive for COVID-19, you are encouraged to report your results to covidaction@utep.edu, so that the Dean of Students Office can provide you with support and help with communication with your professors. The Student Health Center is equipped to provide COVID-19 testing.

The Center for Disease Control and Prevention recommends that people in areas of substantial or high COVID-19 transmission wear face masks when indoors in groups of people. The best way that Miners can take care of Miners is to get the vaccine. If you still need the vaccine, it is widely available in the El Paso area, and will be available at no charge on campus during the first week of classes. For more information about the current rates, testing, and vaccinations, please visit epstrong.org.

9 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.

9.1 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.

9.2 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 18 – Feb 19)	
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 20 – Mar 12)	
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 13 – Mar 17	***** Spring Break *****

Predictive Data Mining (Mar 20 – Apr 16)	
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 22
Non-parametric Methods (Apr 17 – May 3)	
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 12 (1:00 pm – 3:45 pm)