University of Texas at El Paso
College of Business Administration

Business Analytics
Fall 2021

1   Course Information

Course:	QMB 3350-001: CRN 16447
Instructor:	Dr. Seyedmasood Dastan
Email:	sdastan@utep.edu
Office Hours:	MW 1:30 pm - 3:30 pm or by appointment
	Office: College of Business Admin 227
	Note: Virtual office hours are also available.
Time:	MW 6:00 pm - 7:20 pm
Location:	College of Business Admin 302
Prerequisite:	See Academic Catalog

2   Course Description/Objectives::

This course will teach students the basic principles and techniques used in business analytics to process big data. Students will learn to explore data quality, visualize relationships between features, build basic predictive models, and evaluate predictions using R programming. This course will cover predictive modeling analytics and demonstrate how to move towards actions and decisions based on data insights. Classification models using nearest neighbor methods, naïve Bayes, and decision trees will be covered. Numeric forecasting using regression methods and black-box methods will also be implemented. Ethics and case studies will be discussed demonstrating predictive modeling in real-world business contexts. Students who successfully complete this course will be able to:

- Code in R (at a novice level)

- Implement the data science process

- View business problems from a data perspective

- Deliver descriptive and predictive analytics

- Support decisions confidently using data

2.1 Topics:

R programming; dataset manipulation; machine learning algorithms; deciding on features; binning and sampling; nearest neighbor; decision trees; naïve Bayes; linear and logistic regression; ensemble methods (random forests, boosting, and bagging); model evaluation (cross validation, misclassification rate, hold-out sampling, confusion matrices); predicting risk, expenses, value, and customer churn

3 Textbook:

There is no required textbook for this course. If you are interested in a reference book about programming in R (recommended, but not required), I suggest the following:

- The Art of R Programming, 1st edition, Matloff ($20)

- The R Book, 2nd Edition, Crawley ($30)

Resources/Reference books about theoretical concepts (not required):

- Fundamentals of Machine Learning for Predictive Data Analytics, 1st edition, Kelleher, Mac Namee, and D'Arcy ($50)

- Statistical Inference Via Data Science: A Modern Dive Into R and the Tidyverse, Kim and Ismay (Free)

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 vs. points-available system. Instead, each assignment is normalized, then the assignment category average is calculated, and finally each group is weighted accordingly to calculate your final grade. The weights associated with each assignment category are shown below:

- Homework assignments - 10%

- Datacamp assignments - 10%

- Labs - 15%

- Quizzes - 15%

- Midterm Project - 20% (Due on October 24th)

- Final Project - 25% (Due on December 5th)

- Engagement/Participation - 5%

- **Weighted total - 100%**

Note that there is no extra credit activity 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, 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.**

5.1   Late Assignments:

Missing/Incomplete assignments and lack of communication are by far the most predictive factors for failure in this course. Please communicate early and often about any difficulties you may be having (in class or otherwise), and I will do my best to be flexible and fair. I cannot help you if you do not let me know what is going on.

Otherwise, the penalty for a late assignment are:

- 10% penalty for delay less than a week.

- 20% penalty for delay between one and two weeks.

- 30% penalty for any delay longer than that. The last day to submit any delayed work is **Dec 5th**.

- Final project is Due on **Dec 5th**. There is no late policy for the final project.

If you have questions about extenuating circumstances, please email, or set up an appointment with me.

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   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.

8   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 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.

10 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.