Course Syllabus

Course Information

BUAN (MIS/OPRE) 6356; Business Analytics with R; Fall 2018

BUAN (MIS) 6356.501.18F	Mon 7-10 pm	JSOM 1.212
BUAN (MIS) 6356.502.18F	Wed 7-10 pm	JSOM 2.714
BUAN (MIS) 6356.001.18F	Fri 1-4 pm	JSOM 2.717
BUAN (MIS) 6356.003.18F	Fri 4-7 pm	JSOM 2.717

Professor Contact Information

Jason Parker

Office:	JSOM 3.807
Office number:	(972) 883-5141
Office hours:	Tues-Thurs 2-5

Course Pre-requisites, Co-requisites, and/or Other Restrictions

No courses are required; although a background competency in mathematics and computers is assumed.

Course Description

BUAN 6356 - Business Analytics With R (3 semester credit hours) This course covers theories and applications of business analytics. The focus is on extracting business intelligence from firms' business data for various applications, including (but not limited to) customer segmentation, customer relationship management (CRM), personalization, online recommendation systems, web mining, and product assortment. The emphasis is placed on the 'know-how' -- knowing how to extract and apply business analytics to improve business decision-making. Students will also acquire hands-on experience with business analytics software in the form of R. Credit cannot be received for both courses, BUAN 6324 and BUAN 6356. (3-0) Y

Student Learning Objectives/Outcomes

- To gain an in-depth knowledge of prediction, classification, clustering, and missing data methodology and the various R packages used to analyze and visualize data.
- To use control structures and programming to write own-code for solving problem set questions in R.
- To be able to interpret and evaluate models for solving homework and test problems without the aid of instructor-defined variables.

Required Textbooks and Materials

Access to a computer which can run the R statistical computing software. Ideally, this would be the student's own machine which they could bring into class, although that is not necessary. The computer labs on campus are sufficient for using the R program for this course.

For this course, we will be using the current version of Open R (https://mran.microsoft.com/download/) as of 8/15 which is 3.5.1 in the R Studio IDE (https://www.rstudio.com).

No textbooks are required for this course.

Suggested Course Materials

Many textbooks relevant to this course can be found online for free from their publishers

Two examples include:

1. A difficult, but thorough text is
   James, Gareth, Daniela Witten, Trevor Hastie, and Robert Tibshirani. *An introduction to statistical learning.* Vol. 112. New York: springer, 2013.
2. An introductory text is
   Wickham, H., & Grolemund, G. (2016). *R for data science: import, tidy, transform, visualize, and model data.* O'Reilly Media, Inc.

Both of these texts are freely available online.

Assignments & Academic Calendar

The midterm and final will be taken in class.

Week	Mon	Wed	Fri	R Material	PS due
1	8/20	8/22	8/24	Intro + Linear models	
2	8/27	8/29	8/31		8/31
3	9/10	9/5	9/7	Endogeneity + Time series	9/10
4	9/17	9/12	9/14		
5	9/24	9/19	9/21	Model selection + GLMs	9/24
6	10/1	9/26	9/28		
7	10/8	10/3	10/5	Exam 1	
8	10/15	10/10	10/12		
9	10/22	10/17	10/19	Recursive partitioning	10/22
10	10/29	10/24	10/26		
11	11/5	10/31	11/2	Clustering	11/5
12	11/12	11/7	11/9		
13	11/26	11/14	11/16	Dimension reduction	11/26
14	12/3	11/28	11/30	Missing data	
15	12/10	12/5	12/7	Exam 2	

Grading Policy

50% Problem sets (6 total, equally weighted)
50% Exams (2 total, equally weighted)

Grading is on an absolute scale:

A	= 92.5 and above
A-	= 89.5 to 92.4
B+	= 87.5 to 89.4
Etc.	

Course & Instructor Policies

Extra credit is not available for this course. Make-up exams will not be given. With clear, physical proof for an excused absence in an exam (e.g., hospitalization or death of an immediate family member), an exam may be dropped (i.e., the other exam will count double). Classroom attendance will not be taken, but attendance is highly encouraged.

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."

UT Dallas Syllabus Policies and Procedures

The information contained in the following link constitutes the University's policies and procedures segment of the course syllabus.

Please go to http://go.utdallas.edu/syllabus-policies for these policies.

The descriptions and timelines contained in this syllabus are subject to change at the discretion of the Professor.