

Colorado State University (Pueblo), Hasan School of Business, Spring 2017

BUSAD 360 – Advanced Statistics

Section 1: TTh 1:00-2:20 (HSB 113), Section 2: TTh 2:30-3:50 (HSB 113)

Instructor: Justin O. Holman, Ph.D.

Office hours: HSB 253, MW 12:30-2:30, TTh 12:30-1:00

Course Page: <http://www.justinholman.com/teaching/f17-busad360/>

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Overview: This class will explore advanced techniques in business statistics with a focus on applied regression analysis. Topics covered will include Scatter Plots, Correlation, Bivariate and Multiple Regression Analysis, Model Building, Curve-Fitting with Polynomials, Time Series Forecasting, Data Visualization, Statistical Computing and Monte Carlo Simulation.

Prerequisites: MATH 121, BUSAD 265 or equivalent.

Textbook: *Introduction to the Practice of Statistics*, 6th ed. by D.S. Moore et al.

Software: Google Sheets with XL Miner Add-On

Course Format: This will *not* be a traditional lecture class. Instead, we will use a “blended” approach. See https://en.wikipedia.org/wiki/Blended_learning or http://en.wikipedia.org/wiki/Flip_teaching.

Grading Components:

- **Exams** There will be 3 midterm exams (20% each) and a comprehensive final exam (25%). Midterm exams will have 2 parts. Part 1 will be a take-home project and Part 2 will be a traditional in-class exam with problem solving, short essay and/or multiple choice questions.
- **Attendance and Participation** Students are expected to attend classes and participate in classroom activities (15%).

Grading Criteria

Each grading component will be assigned a score expressed as a percentage. The weighted average of these percentages will determine your final grade. Standard grading thresholds will apply, i.e., $\geq 90\%$ will earn an A, $\geq 80\%$ a B, $\geq 70\%$ a C, $\geq 60\%$ a D, and $< 60\%$ an F.

Classroom Etiquette

Professional behavior is expected at all times. Disruptive behavior in the classroom will not be tolerated. Anyone causing a disturbance will be asked to leave the classroom. Multiple infractions may result in referral to the Office of Student Judicial Affairs and/or being dropped from the class.

Special Accommodations

Some students may require special accommodation, for a variety of reasons, to achieve learning objectives. I will do my best to facilitate such requests. Please email or see me during office hours to make arrangements.

Court of Appeals

If a student is unable to attend class, misses an exam or fails to complete an assignment the score or grade assigned will be zero. Depending on circumstances, a makeup opportunity may be granted. Students may also request a review of an exam or assignment score. The Court of Appeals will only accept requests submitted via email to provide a communication trail and avoid misunderstandings.

Course Outline (subject to change):

<u>Week</u>	<u>Topic</u>
1	Syllabus, Least Squares
2	Correlation and Simple Regression
3	Residual Analysis and Test of Slope
4	Review and Exam 1
5	Scatter Plots and Correlation Matrices
6	Regression and Output Interpretation
7	Time Series Forecasting
8	Measuring Forecast Error
9	Review and Exam 2
10	Spring Break
11	Multiple Regression
12	Building Multivariate Regression Models
13	Review and Exam 3
14	Big Data Analytics
15	Finals Week - Comprehensive Final Exam