BUS 211 – BUSINESS STATISTICS

SYLLABUS

Fall 2022

1. INSTRUCTOR INFORMATION:

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Phone : 706-290-2686

Office Hours: MW: 3:30-6:00PM, F: 1:00-6:00PM

2. CLASS TIME AND LOCATION:

Class time: MW 2:00-3:15PM

Location: Green Hall 306

3. CLASS DESCRIPTION

Prerequisite: MAT 111

Credits: 3 hours

Purpose of the course: BUS 211 prepares students for applications of statistical concepts in upper division Business curriculum. The class has two major focuses that go hand-in-hand with each other: (1) To solidify students' understanding of statistical concepts, and (2) To train students with the skill to fluently and masterfully use Excel as a tool for statistical analysis and data presentation (descriptive statistics and graphics).

Class description: Analysis of variance, applications of the chi-square statistic, simple linear regression, multiple linear regression, time-series analysis, index numbers, forecasting methods, decision making under uncertainty, nonparametric statistics and other topics of current interest.

This course introduces students to the application of Statistics in Business. Students will be rigorously trained with hands-on experience in data analysis & visualization to apply the concepts and methods discussed in lectures. There will be excel training & exercises every week to help students improve Excel skills and better grasp the concepts & procedure.

Learning Outcome & Assessment Measures: At the end of the class, students are expected to demonstrate a firm understanding of the statistical concepts introduced and to be proficient in Excel data analysis and visualization, knowledgeable in how to deal with different data sets, and able to use available data for business decisions. Upon completion of the course, students will be able to:

a. Explain sampling distribution of an estimator and the properties of unbiasedness and efficiency.
b. Explain and perform hypothesis testing. This is part of the graded homework exercise and end-of-the-semester project.
c. Model and perform regression analysis. This is part of the graded homework and is the focus of the end-of-the-semester project.

d. Evaluate regression results. Students must be able to interpret the regression results, including the sign and magnitude of the coefficients, significance level of the coefficients, goodness of fit, etc.
e. Use dummy variables.
f. Explain multi-collinearity and its effects on regression results
g. Understand basic time series models and use them in simple forecasting. This is part of the graded homework and end-of-semester project.

Tips: Playing around with data for a very long time will help familiarize yourself with both statistical concepts and excel skills.

4. TEXTBOOK AND COURSE MATERIALS:

Textbook: Gerald Keller, "*Statistics for Management and Economics*". ISBN-13: 978-1285425450

Statistics for Management and Economics: Keller, Gerald: 9781285425450: Amazon.com: Books

Other materials: Lecture notes.

Supplemental text: Applied Business Statistics

Applied Business Statistics: Methods and Excel-based Applications 3e (wordpress.com)

Excel Data Analysis - Data Visualization - Tutorialspoint
Introduction to Econometrics. Authors: Stock & Watson. ISBN-13: 978-0134461991
Introduction to Econometrics (Pearson Series in Economics): 9780134461991: Economics Books @ Amazon.com

5. BASIC COURSE FLOW

Students are expected to do the readings beforehand for assigned chapters and engage in discussion in class. Each week, there will be a homework covering the topics discussed during the week. The homework is due at the beginning of the following week.

There are 3 exams: 2 Midterms and a non-cumulative Final. Before each exam, there will be review sessions to cover important topics to be covered. This includes going through the answers to the homework relevant to the exams.

There is a group project that reflects the students' comprehensive learning of the materials. Students are evaluated based on both writing and presentation. It is encouraged that groups start early in the semester.

6. ASSESSMENT

Components

- **Homework**: 6 Homework, 5 Highest count. 6% each. **Total = 30%**
  Homework will be biweekly, in the form of hands-on excel assignments that utilizes statistical knowledge obtained in class. There are a total of 6 homework assigned to students, 5 of which count towards the final grade.
- **Exams:** 2 Exams, 20%-20%. **Total = 40%**
  Exams are divided into Multiple choice and essay/calculation questions. Topics are based on the concepts introduced in class and homework from relevant topics.
- **Group Project: 30%**

Writing (20%): Form a group of 2-3. Choose a topic of interest to write a comprehensive report about. The topics might be from the supplemental readings, recent news, a country or region, an industry, or a company, etc. The goal of the report is to utilize as much statistical knowledge and excel skills from the class as possible to analyze the topic at hand. It is important to think of a topic early and discuss with the instructor (me) how you want to approach it. More guidelines for the project can be found in a separate document.

Presentation (10%)

Grading Scale

<60	60-69.99	70-72.99	73-76.99	77-79.99	80-82.99	83-86.99	87-89.99	90-92.99	93-100
F	D	C-	C	C+	B-	B	B+	A-	A

***Attendance:** I do not count attendance towards final grades, but will take it into consideration when entering the final letter grade if you're within 0.1 points from the next grade bracket.

7. CLASS POLICY

Attendance & Participation: Students are not required to but strongly encouraged to attend every single class. It is evident that good results in both short term and long term from this class are strictly correlated with attendance.

Exam Make up: There are no makeups for exams or late homework. Students with sufficient evidence to miss an exam will have the weight of the missed exam added to the following exam.

In-class behavior: Distractions are not allowed. The use of cellphone and laptop are not allowed unless instructed. Any in-class discussion has to be non-disruptive and constructive to the lecture or topic of discussion.

Academic Integrity; Academic dishonesty in any form will be subject to the penalty of immediate zero on the homework/ exam.

8. RESOURCES:

Consultants at the Berry College Writing Center are available to assist students with all stages of the writing process. To schedule an appointment, visit berry.mywconline.com

The Academic Success Center provides free peer tutoring and individual academic consultations to all Berry College students. The ASC Session schedule is available on ASC Website: berry.edu/ASC. The goal of these meetings is to help students study smarter, not harder.

Accommodation Statement: The Academic Success Center provides accessibility resources, including academic accommodations, to students with diagnosed differences and/or disabilities. If you need accommodations for this or other classes, please visit berry.edu/asc for information and resources. You may also reach out at 706-233-40480. Please note, faculty are not required, as part of any temporary or long-term accommodation, to distribute recordings of class sessions.

News papers

The Economist

The New York Times

Podcasts:

Freakonomics Radio:

The Economist Podcasts

Planet Money-NPR

Probable Causation

Econtalk

The Grumpy Economist

Data sources:

Select (optional) internet sites: http://www.brint.com for business research in information and technology

http://www.blackwellpublishing.com/essentialmedstats/004.pdf - clear explanation of st. dev.

http://www.asq.org for American Society of Quality http://stats.bls.gov for U.S. Bureau of Labor Statistics

www.econ-datalinks.org for American Statistical Association www.sec.gov for public company filings (all U.S. public plus foreign public with U.S. listings)

www.hoovers.com for summary company info, comparables search, etc.

http://www.statsoft.com/textbook/basic-statistics for straightforward explanations of statistical terms and concepts

city-data.com

Census.gov

Citylab.com

9. COURSE SCHEDULE (TENTATIVE)

*This schedule is tentative and subject to change according to the progression of the course

Week	Date	Topics	Note	Due
Week 1	8/22	Introduction, Syllabus		
		Business & Statistics Data analysis & Visualization		
		Excel workshop: basics		
Week 2	8/29	MLK day. No classes		
		Data visualization: Histogram, bar plot, pie chart, scatterplot Descriptive Statistics: numerical descriptive statistics. Box plots	Chapter 2,3,4	
		Excel workshop Data visualization: Histogram, bar charts, pie charts, line charts, scatterplots Descriptive statistics: Data analysis toolpak		HW1
Week 3	9/05	Labor day		

		Probability Theory: Random variables, Probability distributions. Discrete probability distribution. Continuous Probability Distribution Excel workshop: Probability in Excel	Chapter 7 & 8	
		Sampling distribution Statistical inferences: Estimation, Hypothesis testing, confidence intervals	Chapter 9, 10 &11	
Week 4	9/12	Statistical inferences	Chapter 12 & 13	
		Excel workshop: Analysis Toolpak		HW2
Week 5	9/19	ANOVA Chi-squared test	Chapter 14 & 15 Chapter 16	
		Manual vs analysis toolpak Visualization Excel workshop: ANOVA		
Week 6	9/26	ANOVA with linear regression Excel workshop: linear regression	Chapter 16	
		Review for MIDTERM		HW3
Week 7	**10/03**	**MIDTERM EXAM (20%)**		
		Excel workshop		
Week 8	10/10	Linear regression with multiple regressors	Chapter 17	
		Excel workshop		HW4
Week 9	10/17	Fall break		
	10/19	Excel workshop		
Week 10	10/24	Nonlinear regression.	Lecture notes	
		Excel workshop		
Week 11	10/31	Nonlinear regression. Dummy variables, Interactions		
		Excel workshop		HW5
Week 12	11/07	Time series analysis & Forecasting	Lecture notes	
		Excel workshop		
Week 13	11/14	Research samples		
		Group presentation		HW6
Week 14	11/21	Group presentation		
	11/23	Thanksgving		
Week 15	11/28 11/30	Group presentation(cont)		
Week 16	**12/02**	**Final exam review**		Group project writing due
	12/05	**Final Exam (20%)** **2:00-4:00PM**		
