



Statistics for Business and Economics
BUAD 202-7,8
Carlos Hurtado
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Fall 2019

1 Information

Instructor: Carlos Hurtado

Class Lecture: M,W Sec:7 1:30 - 2:45 pm. Sec:8 3:00 - 4:15 pm.

Classroom: RSB-254

Office Hours: M,W 11 am - 1 pm. Also, after 4:15 pm or by e-mail appointment

Office: RSB-261

Class Web-page: <https://blackboard.richmond.edu/>

2 Material

Textbook:

Anderson, Sweeney, Williams, Camm, and Cochran. Essentials Of Modern Business Statistics 7th Ed. Bundle. Cengage Learning (Looseleaf version). ISBN 978-1-337-29830-8

Other:

You will need a calculator to perform necessary computations. No graphing calculators or communication devices allowed. If you don't have a calculator, I recommend the Texas Instruments TI-30XS MultiView Scientific Calculator because it is affordable and powerful. You can also consider the Casio fx-300MSPLUS2 as an affordable option. The Texas Instruments BA-II Plus calculator may be of interest as a more specialized device that also performs financial computations. Please don't use computers or cellphones as "calculators" for the quizzes or exams. Finally, make sure that you have access to Microsoft Excel to perform some calculations in and outside of class.

3 Goals

The goal of this course is to familiarize you with statistical techniques that can be applied to a variety of settings, including business and economic problems. By the end of this course you will understand descriptive statistics, probability, discrete and continuous distributions, confidence intervals, hypothesis testing, comparison of two populations, analysis of variance, simple linear regression, and multiple regression. Students should anticipate spending 10-12 hours per week on this class, including attending lectures and completing assignments outside of the classroom.

4 Teaching Philosophy

I believe that learning is a process that can be supported by peers, and that my role as an instructor is to guide my students throughout the process of developing skills and new knowledge. In my classes, students reinforce their understanding of the material by working on individual or group assignments that use hands-on examples. I foster the critical thinking of my students with assignments that require analysis and integration of concepts. I encourage discussion during class, but I also offer alternative methods of communication to acknowledge the diverse background of people in the classroom. I have an open-door policy: any person can come to my office at any time to discuss issues, ask questions, get or give feedback, report problems, or share ideas.

I use lecture slides and a class web-page to share the presentations. The slides reduce the time spent by students taking notes and allow them to focus more on the concepts. My students can review the material before and after the lecture. Some of them print the lecture presentation and take notes of the discussion directly on their printed copies. I believe that learning is an individual process, and students integrate concepts at different speeds. I use the slides to ensure that students get the opportunity to review the material at their own pace.

I assess students using classical examinations and assignments that aim to verify the understanding of concepts and encourage engagement in critical thinking. A few lectures before exams, I devote time from the class to review ideas, and I solve practice questions to clarify methods. The homework assignments have a balance between low-level cognitive skills such as retention or application of concepts and high-level cognitive abilities that involve analysis, evaluation, and creativity. I devote extra effort to make sure that my grading is fair and agrees with the topics learned in class and the expectations of students.

5 Academic Integrity

Please see the University's [honor code](#). I will follow this and abide by the Honor Council's decision.

6 Expectations

I will share the lecture slides using the class web-page. I will post problem sets every week on Wednesday. I encourage students to work in groups on these homework assignments. The problem sets will not be collected, but I expect students to understand the solutions to the homework assignments. There will be six announced quizzes, and I will drop the lower two grades of those quizzes to compute the final grade. The quizzes will evaluate your understanding of the homework assignments and the course material in general. Students will have three partial exams and one comprehensive final examination.

Students are expected to take an active part in this course, including being prepared to discuss text book material in class and take part in class activities. This requires keeping up with assigned reading, homework, and practice problems. The building-block nature of this course requires consistent study habits. For that reason, I expect you to attend all lectures, and to

have read the text assignment before class. If you are having trouble with materials covered in previous classes, please do not hesitate to come to me for help.

7 Additional Support

If you experience difficulties in this course, do not hesitate to consult with me. There are also other resources that can support you in your efforts to meet course requirements.

Academic Skills Center:

<http://asc.richmond.edu>, 289-8626 or 289-8956

Supports students in assessing their academic strengths and weaknesses; honing their academic skills through teaching effective test preparation, critical reading and thinking, information processing, concentration, and related techniques; working on specific subjects (e.g. calculus, chemistry, accounting, etc.); and encouraging campus and community involvement.

Boatwright Library Research Librarians:

<http://library.richmond.edu/help/ask.html> or 289-8669

Research librarians assist students with identifying and locating the best resources for class assignments, research papers and other course projects. Librarians also assist students with questions about citing sources correctly. Students can schedule a personal research appointment, meet with librarians at the library's main service desk, or contact them using email, text or IM.

Career Services:

<http://careerservices.richmond.edu/> or 289-8547

Can assist you in exploring your interests and abilities, choosing a major, connecting with internships and learning experiences, investigating graduate and professional school options, and landing your first job. We encourage you to schedule an appointment with a career advisor early in your time at UR.

Counseling and Psychological Services:

<http://caps.richmond.edu> or 289-8119

Can assist students in meeting academic, personal, or emotional challenges. Services include assessment, short-term counseling and psychotherapy, crisis intervention, psychiatric consultation, and related services.

Disability Services

<http://disability.richmond.edu/students/> or 289-8032

The Office of Disability Services works to ensure that qualified students with disability (whether incoming or current) are provided with reasonable accommodations that enable that student to participate fully in activities, programs, services and benefits provided to all students. Please let your professor know as soon as possible if you have an accommodation that requires academic coordination and planning.

Speech Center:

<http://speech.richmond.edu> or 289-6409

Assists with preparation and practice in the pursuit of excellence in public expression. Recording, playback, coaching and critique sessions offered by teams of student consultants trained to assist in developing ideas, arranging key points for more effective organization, improving style and delivery, and handling multimedia aids for individual and group presentations.

Writing Center:

<http://writing.richmond.edu> or 289-8263

Assists writers at all levels of experience, across all majors. Students can schedule appointments with trained peer writing consultants who offer friendly critiques of written work.

8 Grading

Grades for this course will be determined through the combination of quizzes and exams. Components of the grade will be given the following weights:

Exam 1	20 %
Exam 2	20 %
Exam 3	20 %
Quizzes	15 %
Comprehensive Final Exam	25 %

Final grade: Is the weighted average of examinations and quizzes using the above percentages. I will drop the lower two grades of the six scheduled quizzes to compute the final grade. Grading will be on a ten-point scale: 90-100 = A, 80-89 = B, 70-79 = C, 60-69 = D, and below 60 is an F. Within this scale, plus and minus designations will be given to the top two and lowest two numerical scores, respectively. I will round final grades to the nearest hundredth.

Other considerations:

If you have complaints regarding the results of an examination or a quiz, you should submit your complaints in writing within 48 hours from the time when the graded examination was returned. After reviewing a written complaint, your entire examination will be graded again, and the result will be final.

To be fair, all students must take examinations at the scheduled time. Generally, students are discouraged from taking the make-up instead of the regular examination. Only university excuses will be considered for a make-up examination. See me if you have an unavoidable schedule conflict.

9 Course Outline

Tentative: This outline will be updated as we proceed through the course.

Week	Date	Chapter	Subchapter	Topics	Quizzes
Week 1	Aug-26	1. Data and Statistics	1.1, 1.2, 1.4, 1.5	Introduction, Data, Descriptive Statistics, Statistical Inference	
	Aug-28	3. Descriptive Statistics: Numerical Measures	3.1, 3.2	Measures of Location, Measures of Variability	
Week 2	Sep-2	3. Descriptive Statistics: Numerical Measures	3.3, 3.5	Measures of Distribution Shape, Association	
	Sep-4	4. Introduction to Probability	4.1, 4.2, 4.3	Counting Rules, Assigning Probabilities, Basic Relationships	Quiz 1
Week 3	Sep-9	No Class			
	Sep-11	4. Introduction to Probability	4.4, 4.5	Conditional Probability, Bayes' Theorem	
Week 4	Sep-16	5. Discrete Probability Distributions	5.1, 5.2, 5.3, 5.5	Random Variables, Expectev Value and Variance, Binomial Distribution	
	Sep-18	6. Continuous Probability Distributions	6.1, 6.2	Uniform and Normal Probability Distributions	Quiz 2
Week 5	Sep-23	Review			
	Sep-25	Exam 1			
Week 6	Sep-30	7. Sampling and Sampling Distributions	7.3, 7.4, 7.5, 7.6	Point Estimation and Sampling Distributions	
	Oct-2	8. Interval Estimation	8.1, 8.2, 8.3, 8.4	Population Mean, Sample Size, Population Proportion	
Week 7	Oct-7	9. Hypothesis testing	9.1, 9.2, 9.3	Null and Alternative Hypotheses, Type I and Type II errors, Population Mean	
	Oct-9	9. Hypothesis testing	9.4, 9.5	Population Mean, Population Proportion	Quiz 3
Week 8	Oct-14	Fall Break			
	Oct-16	10. Inference About Means and Proportions	10.1, 10.2, 10.3, 10.4	Inference About the Difference Between Two Population Means and Proportions	
Week 9	Oct-21	11. Inferences About Population Variances	11.1, 11.2	Inference About one and two Population Variances	
	Oct-23	12. Test of Goodness of Fit	12.1, 12.2	Goodness of Fit and Independence	Quiz 4
Week 10	Oct-28	Review			
	Oct-30	Exam 2			
Week 11	Nov-4	13. Experimental Design and ANOVA	13.1, 13.2, 13.4	Analysis of Variance: Completely Randomized and Randomized Block Designs	
	Nov-6	14. Simple Linear Regression	14.1, 14.2, 14.3	Simple Linear Regression, Least Squares Method, Coefficient of Determination	
Week 12	Nov-11	14. Simple Linear Regression	14.4, 14.5, 14.6	Model Assumptions, Testing for Significance, Estimation and Prediction	
	Nov-13	14. Simple Linear Regression	14.7, 14.8, 14.9	Excel's Regression Tool, Residual Analysis, Outliers	Quiz 5
Week 13	Nov-18	15. Multiple Regression	15.1, 15.2, 15.3	Multiple Regression, Least Squares Method, Multiple Coefficient of Determination	
	Nov-20	15. Multiple Regression	15.4, 15.5, 15.6	Model Assumptions, Testing for Significance, Estimation and Prediction	
Week 14	Nov-25	15. Multiple Regression	15.7, 15.8	Categorical Independent Variables, Residual Analysis	Quiz 6
	Nov-27	Thanksgiving Break			
Week 15	Dec-2	Review			
	Dec-4	Exam 3			

Important Dates:

Quiz 1 Sep. 4
Quiz 2 Sep. 18
Exam 1 Sep. 25
Quiz 3 Oct. 9
Last day to withdraw from class..... Oct. 11
Quiz 4 Oct. 23
Exam 2 Oct. 30
Quiz 5 Nov. 13
Quiz 6 Nov. 25
Exam 3 Dec. 4

Final Exam:

Section 7: Dec. 10, from 9 am to noon

Section 8: Dec. 13, from 2 pm to 5 pm