College of Business and Public Management

Quantitative & Statistical Analysis

Course: BUS 500C-01 1117

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Office Hours: Friday 2:00-5:00 and by appointment

Prerequisite

Basic knowledge and access to a spread sheet program such as Excel would be appropriate. Prior knowledge of statistics is not required.

Course Description

This course is designed to provide a working knowledge of descriptive and inferential statistical techniques and applications used in the fields of Business and Management. This course introduces students the basic concept of employing statistical methodology for the analysis and interpretation of business-related data sets. It prepares the student to characterize data measurements both graphically and mathematically, and to infer about the population from which data are obtained.

The course objective is to enhance students' ability to perform the statistical analysis necessary to gain insight, understand the usefulness and limitations of the methods, recognize situations where the methods can be applied beneficially, and to accurately interpret and utilize the results of the analyses. Coverage is topical and will include statistics principles such as descriptive statistics, probability distributions, sampling techniques, inferential statistics, regression and correlation analysis, time-series analysis, and non-parametric statistics. The introduction of concepts via cases in decision-making related to operations and strategies is preferred whenever appropriate.

Course Materials

Statistical Techniques in Business & Economics, Lind, Marchal & Wathen, McGraw-Hill Irwin, 16th edition. This is a required textbook.

Additional Lecture Slides and Readings will be used for the selected topics and they will be posted in **BlackBoard**. Lecture notes and slides focus on the essential elements of the topics covered in the textbook chapters.
For Blackboard Technical Support, please call *Distance and Online Learning* at (909) 593-3511 X4089 or email bbhelp@ulv.edu. You may also call the *Instructional Technology Center* at X4059.

Learning Methods

Quantitative analysis for decision making is about generating intelligence from the data by utilizing sound approaches so as to make better decisions in the business environment. Therefore whenever possible, computer software packages will be utilized. Throughout the course, analyses will be performed based on Excel and other shareware.

The learning methodology used in this course consists of lecture slides, hands-on exercises, discussion, and meeting in-person during office hours.

Being an online course, the course will begin each week from Monday and end on Sunday. Each Monday the instructor will begin by describing the main topics for the week and posting the contents via Blackboard, the online courseware. Sometimes, the topics will require us to carry over to another week or so. The weekly course schedule is described at the end of this document. For each week, the materials are posted in Content directory in Blackboard. Typically there will be a weekly brief, chapter slides, assignments, and other materials such as case file and data. Discussions, labeled by each week, will be where the students will ask shared questions, retrieve further information and explanations, and post responses. If the student prefer asking questions directly the instructor privately, email or personal meeting will be the best option. Typically a student should check the Discussions area once or twice each week so as to retrieve new postings from other students and the instructor. Please keep in mind that the session/discussions are spread over the whole week.

It is critical for students to keep in mind that the purpose of this course is to help you in understanding the fundamental value of the analysis in decision making. Don't get buried in the number crunching and lose track of the purpose of the techniques. It is very likely that students will forget the process of the techniques over time. But once you truly understand the fundamental concept, it should be with you all the time. Therefore, a key role of the instructor is to simplify the materials for students to comprehend. There are three levels of instructions: the instructor's lecture notes (simplest); chapter slides (average); textbook (detailed). Ideally, the first two levels are all you need to comprehend the concepts.

Course Policies

1. Each assignment is due by the date as shown in the schedule. **Late submission within 24 hours will automatically have points deducted (50%) from the assigned score**. After that, no assignments will be accepted.

2. **No make-up exams will be scheduled.**

3. **No incomplete grades will be given**. Offers to perform "extra credit" work will not be entertained.

4. Students who violate on academic dishonesty are subject to disciplinary penalties including the possibility of failure in the course.

Grading

Midterm Exam	**15 points**
Final Exam	**25 points**
Assignments (10points x 6)	**60 points**
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	100 points

The grading rule is:

90% or better:	**A- (90-92)**	**A (93-96)**	**A+ (97-100)**
80% - 89%:	**B- (80-82)**	**B (83-86)**	**B+ (87-89)**
70% - 79%:	**C- (70-72)**	**C (73-76)**	**C+ (77-79)**
60% - 69%:	**D- (60-62)**	**D (63-66)**	**D+ (67-69)**
59% or lower:	**F (0-59)**		

6 assignments are be based on the textbook Exercises. They are essential elements of online learning since the statistical concepts are applied in a realistic business setting so that students can make a link between theory and practice. All assignments will require student's hands-on data analysis using statistical software or Excel add-in.

The midterm and final exam will be of short essay and data-driven analysis. Based on the assignments, if I think your understanding of any particular subject or chapter is not satisfactory, I will select them in the exam. The schedule of the exams is:

	Posting date	Due date:
Midterm Exam:	Friday 02/05	Monday 02/08
Final Exam	Friday 03/04	Monday 03/07

Courseware: Statistical Programs

1. ***Excel Data Analysis***

   For PC users, you need to activate Data Analysis in Excel. It is in FILE → Options → Add-ins. Once it is properly installed, you will see *Data Analysis* under *Data* menu.

   For Mac users, if you don't see Data Analysis under tools, install StatPlus:mac LE. (https://www.analystsoft.com/en/products/statplusmacle/)

2. ***MegaStat***

   This is another Excel add-in statistical tool. It offers some functions that are not included in Excel. It also offers both Windows/Mac version.
   I have posted the most version for Windows/Mac in Blackboard.

Schedule of Topics

Session	Date	Topics	Readings & Assignments Due
Week 1	**01/04**	Introduction Describing Data: Graphic Presentation	**Ch. 1, 2**
Week 2	**01/11**	Describing Data: Numerical Measures Describing Data: Exploring Data	**Ch. 3, 4**
Week 3	**01/18**	Discrete Probability Distributions	**Ch. 6** **HW #1**
Week 4	**01/25**	Continuous Probability Distributions	**Ch. 7** **HW #2**
Week 5	**02/01**	Sampling Distribution Estimation and Confidence Intervals	**Ch. 8, 9** **HW #3**
Week 6	**02/08**	One-Sample Tests of Hypothesis Two-Sample Tests of Hypothesis	**Ch. 10, 11** **Midterm Exam**
Week 7	**02/15**	Analysis of Variance	**Ch. 12** **HW #4**
Week 8	**02/22**	Correlation and Linear Regression Multiple Regression Analysis	**Ch. 13, 14** **HW #5**
Week 9	**02/29**	Time Series and Forecasting	**Ch. 18** **HW #6**
Week 10	**03/07**	Course Review	**Final Exam**

If necessary, some topics may be added/dropped, based on the instructor's discretion. All changes will be announced in Blackboard.