BA 578
Statistical Methods
Spring 2015

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Required Text: Business Statistics, In Practice Bruce L. Bowerman, Richard T. O'Connell, Emily S. Murphree, McGraw-Hill Irwin 7th edition (ISBN-13: **978-0073521497)**. If the book comes without the student CD (with free MegaStat) then get the MegaStat online which costs about $12

ABOUT THE COURSE OUTLINE

A course dealing with statistical concepts including measures of central tendency and dispersion, probability distributions, the Central Limit Theorem, sampling, estimation, hypothesis testing, analysis of variance, correlation and regression analysis. BA 501 or acceptable undergraduate course in statistics.

Course Objectives: The objective of this course is to provide a foundation for the graduate business student on basic principles of statistics to include measurements of location and dispersion, probability, probability distributions, sampling, estimation, hypothesis testing, regression and correlation analysis, and multiple regression. The following are specific objectives for the course that the student will:

1) Learn how to calculate and apply measures of location and measures of dispersion -- grouped and ungrouped data cases.

2) Learn how to apply discrete and continuous probability distributions to various business problems.

3) Understand the hypothesis testing:
   3.1 Be able to perform Test of Hypothesis
   3.2 calculate confidence interval for a population parameter for single sample and two
   sample cases.
   3.3 Understand the concept of p-values.

4) Learn non-parametric test such as the Chi-Square test for Independence as well as Goodness of Fit.

5) Understand regression analysis:
   5.1 Be able to compute and interpret the results of Bivariate Regression
   5.2 Be able to compute and interpret the results of Multivariate Regression.

5.3 Be able to compute and interpret Correlation Analysis
5.4 Be able to perform ANOVA and F-test.
5.5 Be able to understand both the meaning and applicability of a dummy variable.
5.6 Be able to understand the assumptions which underline a regression model.
5.7 Be able to perform a multiple regression using computer software.

GRADES AND ADMINISTRATIVE MATTERS:

Exams: There will be a 2 mid-term exams and a comprehensive final exam There will be no make-up exams. Plan well in advance for the exams**:** there will be no early exams and no make-up exams. An exam that is missed will be considered an F, unless your professor is notified prior to the exam and the excuse is a legitimate medical one or officially approved. Regardless of the excuse, if you miss two tests you will automatically fail the class. Assignments will be announced in the class; it is your responsibility to keep up with the assignments. Late assignments will not be accepted.

Homework: You will have assignments throughout the semester. You can work together for the assignments but are expected to return your own work. **Excel and MegaStat** will be used to solve problems along with calculator and formulas. Learn both techniques. These programs are available with the CD which comes free with the textbook. Therefore, buy a book which has CD included. If the book is available only without CD then get the MegaStat online.

Grading: The grades will be based on 2 exams (15 points each), a comprehensive final exam (40 points), project (20 points), and homework/discussions/class participation (10 points). The grading scale is

90 – 100	A
80 – 89	B
70 – 79	C
60 – 69	D
Below 50	F

HELPFUL HINTS

Objectives of this course is to introduce the student to the statistical methods and their application to real business situations as well as the use of current software available for forecasting.

Systematic study, rather than cramming, is advisable. Class attendance is strongly recommended, but not required. Former students have indicated that the material covered in class is very helpful at the time of the examinations. Reading the assigned materials, working the assigned exercises, taking notes in class, and using the office hours are important learning tools. Specific assignments will be announced orally in the class and it is your responsibility to keep up with all the assignments.

RULES, REGULATIONS AND OTHER STUFF

- ✓ All students enrolled at the university shall follow the tenets of common decency and acceptable behavior conducive to a positive learning environment.
- ✓ The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you have a disability requiring an accommodation, please contact: Office of Student Disability Resources and Services, Texas A&M University-Commerce, Halladay Student Services Building Room 303 A/D, Phone (903) 886-5150 or (903) 886-5835, Fax (903) 468-8148, StudentDisabilityServices@tamu-commerce.edu
- ✓ Plagiarism represents disregard for academic standards and is strictly against University policy. Plagiarized work will result in an **"F"** for the course and further administrative sanctions permitted under University policy. Guidelines for properly quoting someone else's writings and the proper citing of sources can be found in the APA Publication Manual. If you do not understand the term "plagiarism", or if you have difficulty summarizing or documenting sources, contact your professor for assistance. The College of Business and Technology at Texas A&M University-Commerce students will follow the highest level of ethical and professional behavior. Actionable Conduct includes illegal activity, dishonest conduct, cheating, and plagiarism. Failure to abide by the principles of ethical and professional behavior will result in sanctions up to and including dismissal from the university.
- ✓ A&M-Commerce will comply in the classroom, and in online courses, with all federal and state laws prohibiting discrimination and related retaliation on the basis of race, color, religion, sex, national origin, disability, age, genetic information or veteran status. Further, an environment free from discrimination on the basis of sexual orientation, gender identity, or gender expression will be maintained.
- ✓ Academic integrity is the pursuit of scholarly free from fraud and deception and is an educational objective of this institution. Academic dishonesty included, but is not limited to, cheating, plagiarizing, fabricating of information or citations, facilitating acts of academic dishonesty by others, having unauthorized possession of examinations, submitting work of another person or work previously used without informing the instructor, or tampering with the academic work of other students. Students involved in academic dishonesty will fail the course.
- ✓ STUDENT WORKLOAD University graduate students are expected to dedicate a minimum of *90 clock hours* during the term/semester for a 3SH course delivered online.

Learning Statement for BA 578				
	Unsatisfactory	**Emerging**	**Proficient**	**Exemplary**
1) Learn how to calculate and apply measures of location and measures of dispersion -- grouped and ungrouped data cases.	Student cannot and apply any measures of location and measures of dispersion for grouped and ungrouped data.	Student can and apply some measures of location and measures of dispersion for grouped and ungrouped data.	Student can and apply most measures of location and measures of dispersion for grouped and ungrouped data.	Student can and apply all measures of location and measures of dispersion for grouped and ungrouped data.
2) Learn how to apply discrete and continuous probability distributions to various business problems.	Student cannot apply discrete and continuous probability distributions to any business problems.	Student can apply discrete and continuous probability distributions to some business problems.	Student can apply discrete and continuous probability distributions to most of business problems.	Student can apply discrete and continuous probability distributions to all of business problems.
3)Understand the hypothesis testing: 3.1 Be able to perform Test of Hypothesis 3.2 calculate confidence interval for a population parameter for single sample and two sample cases. 3.3 Understand the	3.1 Student cannot perform the test of hypothesis 3.2 Student cannot calculate confidence interval for a population parameter for single sample and two sample cases.	3.1 Student can perform some test of hypothesis 3.2 Student can calculate some confidence interval for a population parameter for single sample and two sample cases. 3.3 Student understands some part of the concept of p-value.	3.1 Student can perform most test of Hypothesis 3.2 Student can calculate most confidence interval for a population parameter for single sample and two sample cases. 3.3 Student understands most	3.1 Student can perform all test of Hypothesis 3.2 Student can calculate all confidence interval for a population parameter for single sample and two sample cases. 3.3 Student

concept of p-values.	3.3 Student doesn‘t understand the concept of p-value.		part of the concept of p-values.	understands the entire concept of p-values.
4) Learn non-parametric test such as the Chi-Square test for Independence as well as Goodness of Fit.	4) Student doesn‘t know non-parametric test such as the Chi-Square test for Independence as well as Goodness of Fit.	4) Student knows some parts of non-parametric test such as the Chi-Square test for Independence as well as Goodness of Fit.	4) Student knows most parts of non-parametric test such as the Chi-Square test for Independence as well as Goodness of Fit.	4) Student knows all parts of non-parametric test such as the Chi-Square test for Independence as well as Goodness of Fit.
5) Understand regression analysis: 5.1 Be able to compute and interpret the results of Bivariate Regression 5.2 Be able to compute and interpret the results of Multivariate Regression. 5.3 Be able to compute and interpret Correlation Analysis	5.1 Student cannot compute and interpret the results of Bivariate Regression 5.2 Student cannot compute and interpret the results of Multivariate Regression 5.3 Student cannot compute and interpret Correlation Analysis 5.4 Student	5.1 Student can compute and interpret some of the results of Bivariate Regression 5.2 Student can compute and interpret some of results of Multivariate Regression 5.3 Student can compute and interpret some parts of Correlation Analysis 5.4 Student can solve easy	5.1 Student can compute and interpret most of the results of Bivariate Regression 5.2 Student can compute and interpret most of results of Multivariate Regression 5.3 Student can compute and interpret most parts of Correlation Analysis 5.4 Student can solve medium-hard questions	5.1 Student can compute and interpret all of the results of Bivariate Regression 5.2 Student can compute and interpret all of results of Multivariate Regression 5.3 Student can compute and interpret all parts of Correlation Analysis

5.4 Be able to perform ANOVA and F-test. 5.5 Be able to understand both the meaning and applicability of a dummy variable. 5.6 Be able to understand the assumptions which underline a regression model. 5.7 Be able to perform a multiple regression using computer software.	cannot solve any questions regarding ANOVA and F-test. 5.5 Student cannot apply the dummy variable to solve any questions. 5.6 Student doesn • ft understand the assumptions which underline a regression model. 5.7 Student is unable to perform a multiple regression using computer software.	questions regarding ANOVA and F-test. 5.5 Student cannot apply the dummy variable to solve some questions. 5.6 Student understands some parts of the assumptions which underline a regression model. 5.7 Student is able to perform a multiple regression using computer software for easy questions	regarding ANOVA and F-test. 5.5 Student cannot apply the dummy variable to solve most questions. 5.6 Student understands most parts of the assumptions which underline a regression model. 5.7 Student is able to perform a multiple regression using computer software for medium-hard questions	5.4 Student can solve difficult questions regarding ANOVA and F-test. 5.5 Student cannot apply the dummy variable to solve all the questions. 5.6 Student understands all parts of the assumptions which underline a regression model. 5.7 Student is able to perform a multiple regression using computer software for difficult questions

ECO 501 is the prerequisite class for all other Economics classes.