

Webster University
COURSE SYLLABUS

BUSN 5760
Course Number and Section

Dr. Evan Barrington
Instructor

Applied Business Statistics
Course Title

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Fall II 2004
Term

Jeffersonville
Campus

Tuesday 6:00 PM –10:00 PM
October 19 – December 14

Dates

Required Textbooks

Anderson, Sweeney, and Williams, *Statistics For Business and Economics*, Ninth Edition, Thomson/Southwestern, 2005

**Texts can be obtained by calling MBS Direct at 1-800-325-3252, or at
Virtual Bookstore at www.mbsdirect.net
Credit Cards and Checks are accepted.**

Course Description

This course provides an overview of the uses of statistical method used in business. It will focus on the application of these techniques rather than their theoretical derivations. Students will be required to understand the appropriate application of statistical procedures and to demonstrate an ability to perform the proper calculations.

Expected Incoming Student Competency

No mathematical background beyond basic algebra is required for this course. Previous exposure to statistics is not essential, but will be to the advantage of the student.

Statement of Course Objectives

Upon successful completion of this course, students will:

- Identify and understand the uses and applications of commonly used statistical measures and procedures.
- Recognize appropriate uses and applications of statistical tests and measures.
- Develop competency in calculating and applying statistical measures and tests.

Course Outcome Competencies

Upon successful completion of this course, students **WILL BE ABLE TO:**

- Implement the basic techniques of statistical analysis, including the ability to perform appropriate calculations.
- Identify appropriate applications of statistical analysis to business problems and operations.
- Understand the basics of probability theory, hypothesis testing and regression analysis

Class Preparation

Pre-Assignment: Briefly review text chapters 1, 2 and 3

Note: Details of the problem assignments will be distributed during Week 1

COURSE SCHEDULE

Week 1	Oct 19	<hr/> SUBJECT: Introduction to Statistics <hr/> Topics: <ul style="list-style-type: none">◆ Introduction to Statistical analysis◆ Using statistics to describe data◆ Measures of central tendency and dispersion Assignments for Week 2: <ul style="list-style-type: none">◆ Selected Problems: Chapters 2 and 3◆ Preview text, chapter 4
Week 2	Oct 26	<hr/> SUBJECT: Basic Probability <hr/> Topics: <ul style="list-style-type: none">◆ Survey basics of probability theory, including:<ul style="list-style-type: none">• Rules of probability• Counting techniques• Bayes theorem. Assignments for Week 3: <ul style="list-style-type: none">◆ Selected Problems: Chapters 4◆ Preview text, chapter 5-6
Week 3	Nov 2	<hr/> SUBJECT: Probability Distributions <hr/> Topics: <ul style="list-style-type: none">◆ Definition of probability distribution◆ Binomial Probability Distribution◆ Normal Probability Distribution Assignments for Week 4: <ul style="list-style-type: none">◆ Selected Problems: Chapters 5 and 6◆ Preview text, chapter 7
Week 4	Nov 9	<hr/> SUBJECT: Sampling and Sampling Distributions <hr/> Topics: <ul style="list-style-type: none">◆ Sampling distribution of the mean◆ Sampling distribution of the sample proportion◆ Review for the mid-term

- ◆ MID-TERM EXAM TO BE DISTRIBUTED – take home exam to be turned in November 16

Assignments for Week 5:

- ◆ Selected Problems: Chapter 7
- ◆ Complete mid-term exam
- ◆ Preview text, chapter 8

Week 5	Nov 16	<hr/> <p>SUBJECT: Confidence Intervals</p> <p>Topics:</p> <ul style="list-style-type: none"> ◆ The theory and applications of confidence intervals ◆ The t-distribution ◆ Determining appropriate sample sizes <p>Assignments for Week 6:</p> <ul style="list-style-type: none"> ◆ Selected Problems Chapter 8 ◆ Preview text, chapters 9 and 10
Week 6	Nov 23	<hr/> <p>SUBJECT: Hypothesis testing</p> <p>Topics:</p> <ul style="list-style-type: none"> ◆ The theory of hypothesis testing ◆ Testing means and proportions for one and two populations ◆ Mid-term exam to be turned in <p>Assignments for Week 7:</p> <ul style="list-style-type: none"> ◆ Selected Problems: Chapters 9 and 10 ◆ Preview text, chapters 12, 13 (13.1 and 13.2) and 19
Week 7	Nov 30	<hr/> <p>SUBJECT: Nonparametric tests, Chi-square and ANOVA</p> <p>Topics:</p> <ul style="list-style-type: none"> ◆ Review of mid-term exam ◆ Tests of Goodness of Fit and independence (Chi-square) ◆ Analysis of Variance ◆ Other Nonparametric tests <p>Assignments for Week 8:</p> <ul style="list-style-type: none"> ◆ Selected Problems: Chapter 12,13 and 19 ◆ Preview text, chapters 14 and 15
Week 8	Dec 7	<hr/> <p>SUBJECT: Regression Analysis</p> <p>Topics:</p> <ul style="list-style-type: none"> ◆ The basics of regression analysis ◆ Applications of regression analysis <p>Assignments for Week 9:</p> <ul style="list-style-type: none"> ◆ Selected Problems: Chapters 14 and 15 ◆ Preview text, chapters 16 and 20 ◆ Review for final exam

- ◆ FINAL EXAM TO BE DISTRIBUTED – take home exam to be turned in December 14

Week 9 Dec 14 SUBJECT: Issues in Model building and Quality Management

Topics:

- ◆ Additional issues in using regression analysis to build models
- ◆ Statistical methods for quality control
- ◆ Course review and summary
- ◆ Turn in final exam.

Supplemental Readings:

- None.

Course Requirements:

	% of grade
A) Term Paper	<u>None</u>
B) Exams: Mid-term 30%, Final 30% (These are take-home exams)	<u>60%</u>
C) Class Participation	<u>10%</u>
D) Class Presentation	<u>None</u>
E) Other - Assigned problems	<u>30%</u>
	<u>100%</u>

Scoring Criteria:

Scoring Criteria: Exams:

- Exams will consist of a set of problems similar to those which have been assigned as homework problems. The exams will consist of 10 to 15 problems and 100 points will be possible on each.

Scoring Criteria: Homework assignments:

- Completing the homework is essential to developing the skills necessary to understand the material and to do well on the exams. Homework will be turned in and graded weekly.

Scoring Criteria: Class Participation:

- Students should make every effort to attend each class meeting. Students are expected to be attentive in class, and to ask questions and participate in the class environment as necessary.

Grading:

- Each exam will include 100 points. Upon completion of grading the exams for all students, the instructor will exam the distribution of scores to determine the appropriate breakpoint

between A's, B's and (if necessary) C's. It is expected that all students who properly apply themselves should be able to attain at least a B.

- Homework problems for the previous week will be reviewed at the first of each class session (prior to the student turning them in.) The instructor will examine them after class; the homework will be returned to the student the following week.
- The final grade will be determined looking at the total of the 2 exam scores (using the numerical score rather than the letter grade described above. A distribution of the combined scores will be utilized in determining the appropriate breakpoints between the various grades.

CONDUCT

Students enrolling in a graduate program at Webster University assume the obligation of conducting themselves in a manner compatible with the University's function as an educational institution. Misconduct for which students are subject to discipline may be divided into the following categories:

1. All forms of dishonesty, cheating, plagiarism, or knowingly furnishing false information to the University.
2. Obstruction or disruption of teaching, research, administration, disciplinary procedures, or other University activities or of other authorized activities on University premises.
3. Theft of or damage to property of the University.

Students who cheat or plagiarize may receive a failing grade for the course in which the cheating or plagiarism took place. Students who engage in any of the above misconducts may be subject to dismissal from the University on careful consideration by the executive vice president of the University or his designee. To the extent that penalties for any of these misconducts (e.g., theft or destruction of property) are prescribed by law, the University will consider appropriate action under such laws.

ATTENDANCE POLICY

Students are expected to attend all class sessions of every course. In the case of unavoidable absence, the student **must** contact the instructor. The student is subject to appropriate academic penalty for incomplete or unacceptable makeup work, or for excessive or unexcused absences. Generally, a student who misses more than one four-hour course period (per course) without a documented military or medical excuse and advanced permission of the instructor should withdraw from the class. The University reserves the right to involuntarily drop enrolled students from classes, which they do not attend. Students who do not attend the first class session, who have not made prior arrangements with the instructor for being absent, will be subject to being dropped from their courses.

MAKE-UP WORK REQUIREMENTS

For each class missed, makeup work will be assigned and must be submitted at the next class. The instructor will assign the topic and amount of work. This makeup work will be incorporated into the class participation grade. If the make-up work is not submitted on time, the student's final grade will be subject to a reduction of one (1) letter grade.

Students are responsible for any class material presented during their absence, and any assignments due should be submitted prior to the absence, if possible.

DISCLAIMER

This syllabus is intended to provide a basic structure to this course. It MAY be modified for class size, student competencies, etc. Adherence to this syllabus is subject to change at the sole discretion of the instructor.