Boston College

Personal Information

Professor	Alison Kelly
Course Title	Elementary Economic Statistics
Section	EC15101, MW 6:15-9:15 p.m., Fulton 220
Office	McGuinn 100
Office Hours	MW 5:30-6:00 p.m., or by appointment
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Required Textbook

Essentials of Statistics for Business and Economics, 5th edition by Anderson, Sweeney, and Williams, Thomson South-Western Publishing Company, 2009.

Course Description

Application of statistical analysis to real-world business and economic problems. Topics include data presentation, measures of central locations and dispersion, probability and probability distributions, estimation and hypothesis testing, simple and multiple regression models. The use of Excel is emphasized throughout the course.

Learning Objectives

1. Present data effectively with the use of tables and graphs.
2. Learn to compute and interpret measures of central location (mean, median, and mode) and measures of dispersion (range, variance, standard deviation, coefficient of variation).
3. Employ basic concepts including conditional probabilities and rules of probabilities.
4. Understand the nature of discrete and continuous probability distributions (including Binomial, Poisson, and Normal distributions).
5. Compute sampling distribution summary measures and appreciate the importance of the central limit theorem.
6. Use data derived from large and small samples to construct confidence intervals for the population mean and the population proportion.
7. Conduct and evaluate hypothesis tests about a population mean and population proportion.
8. Construct regression equations that summarize the relationship among the dependent and the independent variables using Excel.
9. Perform regression diagnostics that determine whether an estimated regression equation makes valid inferences about the underlying true regression.
10. Perform individual and joint tests of significance on regression coefficients.

Course Specifics

There will be a midterm and final exam – the dates are listed below. In addition, there will be 5-8 short in-class quizzes. (Your lowest quiz grade will be dropped) Many quiz questions will come directly from assigned homework problems from previous classes. Homework problems will not be graded, but you will be given ample opportunity to ask questions about them in class as well as during my office hours. Answers to the homework problems can be found in the Solutions Manual on reserve in the library. There will also be several computer assignments. Detailed instructions for these assignments will be discussed in class.

Exam	Date	Weight
Quizzes/Computer Assignments		30% of the grade
Midterm	June 2, 2008	30% of the grade
Final Exam	June 18, 2008	40% of the grade

Other Information

- *No* make-ups are given on any exam. In circumstances that are *absolutely* unavoidable, the final exam may be given the extra weight of the missed exam *only if* you discuss the reason of absence with me, preferably in advance.
- Please turn off cell phones prior to class.
- Use of unfair methods in any exam will not be tolerated. Violators will be dealt with according to Boston College Policy; see the student manual of College Policies for details.

Grading Policy

I expect to use the following scale to make the final grades.

> 93% A	76% - 78% C+
89% - 92% A-	73% - 75% C
86% - 88% B+	69% - 72% C-
83% - 85% B	50% - 68% D range
79% - 82% B-	< 50% F

Course Outline

Date	Topic	Homework Assignment
May 12	**Data and Statistics** (Ch.1) **Descriptive Statistics: Tabular and Graphical Presentations** (Ch.2)	HW1- pp. 40-43: 11,12,13,16,18,20
May 14	**Descriptive Statistics: Numerical Measures** (Ch.3) *Measures of Location* *Measures of Variability*	 HW2 – pp. 87-90: 2-12 (even) HW3 – pp. 95-97: 14,16,18,20,24
Computer Assignment #1		
May 19	*The Weighted Mean and Grouped Data* **Introduction to Probability** (Ch. 4) *Events and Their Probabilities* *Some Basic Relationships of Probability* *Conditional Probability*	HW4 – pp. 122-123: 52-57 HW5 – pp. 154-56: 14,18,19,20,21 HW6 – pp. 161-62: 22-29 HW7 – pp. 167-70: 30-38 (even)
May 21	**Discrete Probability Distributions** (Ch. 5) *Discrete Probability Distributions* *Expected Value and Variance* *Binomial Distribution* *Poisson Distribution*	 HW8 – pp. 192-94: 8-14 (even) HW9 – pp. 196-99: 16-24 (even) HW10 – pp. 208-9: 26, 28-29, 34-35 HW11 – pp. 212-13: 38-44 (even)
Computer Assignment #2		
May 28	**Continuous Probability Distributions** (Ch. 6) *Normal Probability Distribution*	 HW12 – pp. 240-42: 8-24 (even)
June 2	*****MIDTERM*****	
June 4	**Sampling and Sampling Distributions** (Ch. 7) *Point Estimation* *Sampling Distribution of* $\bar{X}$ *Sampling Distribution of* $\bar{p}$	 HW13 – pp. 265-66: 11-17 (omit 14) HW14 – pp. 276-78: 18,19,20,24,26,28 HW15 – pp. 282-84: 32-40 (even)
June 9	**Interval Estimation** (Ch. 8) *Estimation of a Population Mean:* σ^2 *known* *Estimation of a Population Mean:* σ^2 *unknown* *Determining the Sample Size* *Estimation of a Population Proportion*	 HW16 – pp. 299-301: 2, 3, 5, 7, 8, 10 HW17 – pp. 308-10: 12-20 (even) HW18 – pp. 312-13: 24-30 (even) HW19 – pp. 316-18: 32-42 (even)
June 11	**Hypothesis Testing** (Ch. 9) *Null and Alternative Hypotheses* *Type I and Type II Errors* *Tests about a Population Mean:* σ^2 *known* *Tests about a Population Mean:* σ^2 *unknown* *Tests about a Population Proportion*	 HW20 – p. 336: 2, 4 HW21 – pp. 338-39: 6, 8 HW22 – pp. 350-53: 10-22 (even) HW23 – pp. 357-59: 24,26,28,30,34 HW24 – pp. 362-64: 36-42 (even)
June 16	**Regression Analysis** (Ch. 12 and Ch. 13) *Least Squares Method*	 HW25 – pp. 473-74: 2-6 (even)
Computer Assignment #3		
June 18	*****FINAL*****	