Suffolk University
Applied Statistics: Summer 2-2010

Instructor: **Evgeny Vorotnikov**
Lab Instructor: **Alex Su**

Class Information

Section:	STATS250 A
Lecture:	MW 12:00 p.m. – 3:20 p.m., Archer 349
Lab:	Wednesday 3:40 p.m. – 4:30 p.m., Archer 349
Office:	73 Tremont Street, 10th floor, Economics Department
Office Hours	Mondays/Wednesdays 10.30 a.m. – 12.00 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, 2008.

Course Description

This course concentrates on 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, and simple and multiple regression models. The use of Excel is emphasized throughout the course.

Learning Objectives

1. Present data effectively by means of using 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 two exams and a final exam – the dates are listed below. In addition, there will be 8-9 short quizzes (your lowest quiz grade will be dropped.) Many quiz questions will come directly from assigned homework problems from previous classes. Several computer assignments and homework sets will be collected and graded during lab sessions (see attached schedule). Lecture notes of each chapter (sometimes with blanks and examples to be solved in class) are/will be posted on blackboard; please print them and make sure you have the appropriate copy before each class (you may want to create a folder containing all the lecture notes)

	Weight
Quizzes	10% of the grade
Homework/Computer Assignments	15% of the grade
Exam 1: **July 21, 2010**	20% of the grade
Exam 2: **August 4, 2010**	25% of the grade
Final Exam: **August 11, 2010**	30% of the grade

Other Information

- ***No*** make-ups will be given on any quiz/exam. Unexcused absences will result in a score of "zero" for that particular quiz/exam. Excused absences will result in a reweighting of your subsequent quiz/exam grade **after** you provide me with a notification from the Dean of Students.
- I will post various announcements and course materials on Blackboard.
- Please turn off cell phones/electronics prior to class. No texting during class!
- Use of unfair methods in any exam will not be tolerated. Violators will be dealt with according to Suffolk University Policy; see the student manual of College Policies for details.

Suffolk University and I are committed to your success. You are encouraged to contact me privately in order to discuss your academic needs to succeed in this class. For learning assistance, the Ballotti Learning Center has a variety of services designed to help students succeed. They can be contacted at 617.573.8235. Students with documented disabilities may also contact the Office for Disability Services at 617-994-6820 or TTY/TTD 617-994-6813 at 73 Tremont Street to coordinate reasonable accommodations**.**

Course Outline

Date	Topic	Homework Assignment
Week of Jul. 7	**Data and Statistics** (Ch.1) **Descriptive Statistics: Tabular and Graphical Presentations** (Ch.2)	HW1- pp. 40-43: 11,12,13,16,18,20
Week of Jul. 7	**Descriptive Statistics: Numerical Measures** (Ch.3) *Measures of Location* *Measures of Variability*	HW2 – pp. 87-90: 1-11 (odd) HW3 – pp. 95-97: 13,15,19,21,23
Weeks of Jul. 7-12	*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: 31-37(odd)
Weeks of Jul. 12	**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)
Week of Jul. 19	**Continuous Probability Distributions** (Ch. 6) *Normal Probability Distribution*	HW12 – pp. 240-42: 8-24 (even)
*****Exam #1: July 21, 2010*****		
Week of Jul. 26	**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: 31-41 (odd)
Week of Jul. 26	**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: 13-21 (odd) HW18 – pp. 312-13: 24-30 (even) HW19 – pp. 316-18: 32-42 (even)
Weeks of Aug. 2	**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: 9-21 (odd) HW23 – pp. 357-59: 24,26,28,30,34 HW24 – pp. 362-64: 36-42 (even)
*****Exam #2: August 4, 2010*****		
Week of Aug. 2	**Regression Analysis** (Ch. 12 and Ch. 13) *Least Squares Method*	HW25 – pp. 473-74: 2-6 (even)
*****FINAL EXAM: August 11, 2010*****		

Lab Instructor: Alex Su
Meeting Time: Wednesday 3:40 - 4:30 p.m., Archer 349.

Lab Schedule

Date	**Topic**
July 7	Introduction
July 14	HW2 due, Computer Assignment #1 due, Review for Exam#1
July 21	HW7 due, Computer Assignment# 2 due
July 28	HW15 due, Computer Assignment #3 due
August 4	HW17 due, HW22 due, Computer Assignment #4 due;
August 9	Computer Assignment #5 due in Class

All computer and homework assignments are due promptly at the beginning of each lab session – no late assignments accepted! You will be notified through Blackboard if any changes to this schedule are made.

Grading Policy

I expect to use the following scale to calculate 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**
79% - 82%	**B-**	< 50%	**F**