

SYLLABUS

ECONOMICS 156 B

ECONOMICS AND BUSINESS STATISTICS

SPRING TERM 2014

**Instructor:** Dr. Linda L. Ravelle  
Comenius 217  
861-1453  
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**Hours:** M,W,F 10:15 – 11:15 AM  
Also by appointment

**Textbook:** STATISTICS FOR MANAGEMENT AND ECONOMICS ABBREVIATED,  
9<sup>th</sup> Edition, Gerald Keller, South-Western Cengage Learning, 2012.

**Catalog Description:** Introduction to statistical concepts and methods. This course reviews descriptive measures of location and dispersion, provides an overview of probability concepts and distributions, and focuses on statistical inference, hypothesis testing and simple and multiple linear regression analysis. Additional topics may include quality control, and time series analysis. Economics 156 may not be taken for credit by students who have earned credit for Mathematics 107 or 231. Prerequisite: sophomore standing and three years of secondary mathematics through college-level algebra or consent of instructor. (F2)

**Course Objectives:** This course is designed to introduce you to the field of statistics and its many applications in economics and management. The course uses lectures, class discussion, lab work, assignments and exams to help you develop critical thinking skills that will allow you to recognize, describe, and analyze economic problems using statistical tools. By the end of the course you should be able to solve a variety of problems incorporating a three step approach used in the textbook: identify the appropriate statistical technique, compute the value of the statistic(s), and interpret the results. You will also learn to use statistical programs such as Excel and Minitab to help you solve these problems.

**Class Times:** M,W,F 11:45 to 12:55

**Classroom:** Comenius 101

**Grades:** The course grade is determined by the following formula:

Exams	60%
Assignments	20%
Term Project	10%
Class Participation	10%

**Exams:** There are three midterm exams and one final exam. Each exam makes up 15% of your final grade. The exam dates are noted on the syllabus and will not be changed. Exams consist of problems and short answer questions. Formula sheets and tables will be provided, but you must bring calculators to all exams. Your calculator should perform statistical functions, and you should know how to use it before you take an exam. You cannot share calculators, and you cannot use cell phones as calculators. Makeup exams are given only in EMERGENCY situations and are significantly different than the original exam. Cell phones must be turned off and kept out of sight during all exams.

**Term Project:** The term project will be distributed in class.

**Assignments:** You should read assigned chapters before coming to class. Homework assignments for each of the chapters are listed on the syllabus, and are due upon completion of the relevant material on due dates announced in class. These assignments will be graded and YOU MUST SHOW ALL WORK for full credit. Note that answers to selected even numbered problems appear in Appendix C of the textbook. Exercise and cases typed in bold must be completed using Excel or Minitab, as announced in class, and all other problems must be completed manually. The data sets for the Excel and Minitab problems and cases can be found on the textbook web site and also on the p:drive under "econ/Ravelle/Stat Files". If you turn in an assignment late (after the class period in which it is due) the grade will be reduced one letter grade per day late. PLEASE NOTE: the dates, chapters, and assignments are subject to change. If you miss class, you are responsible for finding out about due dates and changes in assignments. Failure to attend class is NOT an excuse for turning in assignments late.

**Attendance and Participation:** I take attendance at the beginning of each class. If you come in late you are responsible for letting me know that you are in class. You should read the assigned chapter and do required assignments before coming to class so that you can participate in classroom discussions. This class will make extensive use of computers, but you may only use the computers when we are working on problems. Keep computers closed at other times. Do not use computer for non-classroom purposes (email, internet browsing, etc.) during class time or you will be asked to leave class. You may not use cell phones in class.

**Honesty:** All students are expected to adhere to the College's Policy on Academic Honesty as outlined in the Student Handbook. Students who violate the Policy must accept the consequences dictated by this policy. If you have any questions about this policy, please see me.

**Disabilities:** Students who wish to request accommodations in this class for a disability should contact Elaine Mara, assistant director of learning services for academic and disability support at 1307 Main Street or by calling 610-861-1510. Accommodations cannot be provided until authorization is received from the office of Learning Services.

**Caveat:** This syllabus is subject to change, as announced in class.

DATE	TOPIC	CHAPTER	ASSIGNMENTS
Jan 13	What is Statistics?	1	
15	Graphical Descriptive Techniques 1	2	3, 15, <b>31, 35</b> , 39, <b>45</b>
17			
20	NO CLASS		
22	Graphical Descriptive Techniques 2	3	7, 10, <b>23, 25</b> , 49, <b>61</b>
24			
27			
29	Numerical Descriptive Techniques	4	3, 5, 9, <b>15</b> , 27, 29, <b>33</b> 48, <b>99, 101</b>
31			
Feb 3			
5			
7	EXAM 1		
10	Data Collection and Sampling	5	1, 3, 9, 13, 17
12			
14	Probability	6	1, 7, 27, 29, 41, 49, 61, 81
17			
19	Random Variables and Discrete Probability Distributions	7	1, 19, 37, <b>73-76</b> , 107, 109, 113, 131
21			
24	Continuous Probability Distributions	8	5, 9, 35, 45, 55, 79
26			
28			

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DATE	TOPIC	CHAPTER	ASSIGNMENTS
Mar 3,5,7	SPRING BREAK		
10	EXAM 2		
12	Sampling Distributions	9	5, 11, 15, 19, 27, 31, 37, 43, 51
14			
17	Introduction to Estimation	10	13, 15, 23, <b>31, 37</b> , 41, 51
19			
21	Introduction to Hypothesis Testing	11	1, 5, 9, 15, 33, <b>35, 43</b> , 63, 65
24			
26	Inference about a Population	12	3, 13, 23, <b>37</b> , 57, 59, <b>65</b> , 71, 81, <b>91</b>
28			
31			
Apr 2	EXAM 3		
4	Analysis of Variance	14	1, 7, <b>11</b> , 33, <b>61</b> , 69, <b>75</b>
7			
9	Chi-Squared Tests	15	3, <b>9</b> , <b>15</b> , 29, <b>35</b>
11	Simple Linear Regression and Correlation	16	1, 3, <b>7</b> , 23, 25, <b>29</b> , 56, 81, <b>99</b>
14			
16			
18			
21	Multiple Regression	17	<b>3</b> , <b>13</b> , 26, <b>45</b>
23			
25			
29	FINAL EXAM	1:30 PM	