

William Paterson University  
Cotsakos College of Business  
Department of Economics, Finance and Global Business

Course Syllabus

Winter 2012/2013

ECON2110: Business Statistics II, 3 credit hours

Instructor: Maria Ramjerdi

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Office Hours: N/A; all instruction will be conducted online

Course prerequisite

ECON 2100 Business Statistics I

Course Description

ECON 2110 - Business Statistics II will cover one-sample and two-sample tests of hypothesis, ANOVA, simple and multiple linear regression, and non-parametric methods such as Chi-square applications and the analysis of ranked data. Optional topics are index numbers, time series and forecasting, quality control, and an introduction to decision theory.

Learning Objectives

- Construct a confidence interval assess its validity.
- Conduct 2 sample test
- Conduct appropriate testing hypotheses and assess the types of errors.
- Perform regression analysis, simple and multiple, determine the validity and determine a course of action intended to deal with a problem.
- Conduct a nonparametric test for ranked data
- Critical thinking

A student who successfully completes this course will have a better understanding economics, the social sciences and business. This course is specifically designed to help students apply their newly-gained knowledge and skills to business and economic situations. This knowledge allows students to have the analytical tools needed for furthering their education, as well as being successful in the business world.

Student learning outcomes

By the end of this course, students should be able to:

- Construct a hypothesis.
- Conduct a test of hypothesis about population parameters, both using the five-step procedure and the p-value.
- Understand Type I and Type II errors and discuss their relationship.
- Conduct a hypothesis test for the equality of two population variances.
- Organize data into ANOVA tables.
- Calculate and interpret the coefficient of correlation, the coefficient of determination, regression coefficients, the regression line, and the standard error of estimate.
- Conduct a test of hypothesis to determine whether regression coefficients are statistically significantly different from zero.
- Describe the relationship between several independent variables and a dependent variable using a multiple regression equation.
- Utilize the Chi-square distribution for goodness-of-fit tests.
- Apply nonparametric methods to analyze ranked data.
- Use Microsoft Excel to carry out the above techniques as applicable.

Text

Statistical Techniques in Business and Economics, 15th ed. Boston: Irwin, McGraw-Hill, 2012 by Douglas A. Lind, William G. Marchal, and Samuel A. Wathen

Note that purchasing the textbook is a course requirement.  
Additionally, readings other than the textbook may be assigned.

#### Tentative Outline

Chapter 10: One-sample tests of hypothesis  
Chapter 11: Two-sample tests of hypothesis  
Chapter 12: Analysis of Variance  
Chapter 13: Simple linear regression and correlation  
Chapter 14: Multiple regression and correlation analysis  
Chapter 17: Nonparametric methods: Chi-square applications  
Chapter 18: Nonparametric methods: Analysis of ranked data

#### Technology Requirements

**Blackboard:** This online course will be conducted via Blackboard online, therefore requires internet connection. If you are not familiar with Blackboard, please click on the “Bb Support: Students” tab once you have logged on at [bb.wpunj.edu](http://bb.wpunj.edu). It has descriptions of many features as well as a link to contact the Blackboard Support Center. There is similar help available before you log on to Blackboard (scroll down on the Blackboard homepage) in case you are experiencing difficulties with logging on.

**Microsoft Office:** The documents that I will be posting on the Blackboard pages will typically be files in Microsoft Office Please ensure that the computer that you are planning to use for this course is able to open this type of files. Additionally, the assignments that you submit must be in a format that I will be able to open with Microsoft Office products.

#### Teaching Methods and Participation Requirements

The course will be conducted in the following format: I will post notes for each chapter that will describe the main features of the chapter, examples, references to additional readings, and practice problems. There will be class discussion of some topics using the Discussion Board in Blackboard.

You are required to access the Blackboard pages daily to check for announcements and other postings such as assignments. I strongly encourage you to keep up with the course since the material that is usually covered over a whole semester is compressed into less than three weeks.

#### Academic integrity

Cheating in its various forms will be severely punished. The minimum penalty is a grade of zero on the assignment in question, but it can go up to expulsion from the university. If you have not done so yet, please familiarize yourself with the “Academic Integrity Policy” (available online at <http://www.wpunj.edu/dotAsset/230122.pdf>). All parts of that Policy are relevant and important, but for the online setting of the class, I especially would like to stress sections II.B. (on plagiarism) and II.C. (on collusion). Please make sure that you truly understand what all parts of the policy mean. To name a few examples, working together with another student on an assignment, getting help on an assignment from someone else (e.g., a tutor), and copying another student’s work are all violations of the Academic Integrity Policy.