

**Economic Data Analytics II**  
**Introduction to Data Management and Statistics for Decision Making**  
**01:220:211**

**Instructor:** Nora Paxton  
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**Class Hours:** M/W 5:35-6:55

**Classroom:** Hickman 202  
**Office:**  
**Office hours:** after class as needed

### Introduction:

This is a lower level elective course for students in non-quantitative majors as well as working individuals who wish to acquire or renew basic skills for analyzing data in support of decision making. Organizations of all sorts—business, government, scientific, educational, non-profit and cultural—have ‘customers’ and need to make allocation decisions to operate effectively and efficiently. While certain specialized skills in big data analytics are strongly in demand in the current job market, many employers also look for individuals with general skills who are “trainable” in the specifics of a job. In this class, you will be able to enhance your Excel skills by learning basic inferential statistics and regression methods, which are econometric tools for estimating and explaining relationships among variables. The tools from both of these courses will allow you to provide important data-based decision support that organizations require.

Upon conclusion of the course, students will have an introduction to methods of economic data analysis and will be able to:

- Use spreadsheet software to collect, clean, transform, visualize, analyze and present data
- Estimate and interpret linear relationships between variables
- Conduct and interpret basic hypothesis tests related to linear regressions
- Present and interpret regression results to a non-specialist audience

**Prerequisites:** Advanced algebra, placement into precalculus. Those intending to complete the Economic Data Analytics Minor should take precalculus (640:111, 640:115, or equivalent), as this is required for the introductory economics sequence, Introduction to Microeconomics (220:102) and Introduction to Macroeconomics (220:103).

**Text:** *Statistics for People Who (Think They) hate Statistics*, Excel 2016 version, by Neil Salkind

**Data analysis tools:** Microsoft Excel. Access to personal or laptop computer with Excel installed is essential.

**Evaluation:** How is the grade determined?

- Class participation (10%)
- 1 Quiz (20%)
- 3 Homework assignments (30%)
- Final in-class presentation (40%)

Class	Date	Topic	Readings
1	3/8	Quick Review – Look at how far we’ve come! Quick Preview – Where we are headed (new syllabus)	
<b>Spring Break</b>			
2	3/20	Hypothesis testing	Chapter 7
3	3/22	Distributions -General definition -Normal distribution -Z score	Chapter 8
4	3/27	Inferential statistics -statistical significance -significant vs meaningful -determine what test to use  Discussion of In-class Presentations – bring ideas!!	<b>Homework #1 DUE</b> Chapter 9  Bring ideas/questions about final presentations
5	3/29	Testing one sample -z test -how to interpret	Chapter 10
6	4/3	Testing two independent samples -t test -how to interpret	Chapter 11
7	4/5	Testing two dependent (related) samples -t tests again -how to interpret	<b>Homework #2 DUE</b> Chapter 12
8	4/10	Testing more than two samples -analysis of variance -ANOVA -Intro to factorial analysis	Chapter 13 Chapter 14
9	4/12	Other important statistical tests -significance of correlation coefficient -chisq -F Test	<b>QUIZ</b>  Chapter 15 Chapter 17 Chapter 18
10	4/17	Linear Regression -What is a linear regression? -dependent and independent variables -using Excel data analysis	Chapter 16
11	4/19	Linear Regression continued -more examples/practice -assess quality of regression -multiple regressions	<b>Homework #3 DUE</b> Chapter 16 Chapter 17 Chapter 18

		-logistic regressions	
12	4/24	Introduction to Data Mining	Chapter 20
13	4/26	<b>In class presentations</b>	
14	5/1	<b>In class presentations</b>	