

**Dr. Christina Marsh Dalton**

**ECN 209: Applied Econometrics**

**Course Syllabus**

**Fall 2015**

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**Prerequisite:** P-ECN 150 and MTH 109 or 256  
**Meeting Room:** Kirby 103  
**Office Address:** 204B Kirby Hall  
**Office Phone:** 336-758-4495  
**Office Hours:** Monday and Wednesday 4pm-5pm, or by email appointment

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## **I. Course Description**

An introduction to regression analysis methods used to estimate and test relationships among economic variables. Selected applications from microeconomics and macroeconomics are studied. Emphasis is on examining economic data, identifying which methods are appropriate, and interpreting statistical results.

## **II. Course Objective**

After taking this class, you will be able to:

1. Specify and estimate linear regressions using both cross-sectional and time series data
2. Test hypotheses about model parameters,
3. Interpret the estimation and testing results in light of economic theory.
4. You will also learn good data management skills to use when creating and using datasets.

## **III. Course Material**

Required text: *Introduction to Econometrics, 3rd Edition. Stock and Watson*

Software: Empirical projects that require the use of statistical software. The software of choice for this class is Stata, and it is freely available to students through Wake. We will go over how to access to Stata.

You will find resources for learning how to use Stata on my page as well as in the text.

[http://users.wfu.edu/daltonc/stata/tutorial\\_tlmrevise.pdf](http://users.wfu.edu/daltonc/stata/tutorial_tlmrevise.pdf)

## **IV. Methods of Instruction and Work Expectations**

You will spend significant time:

1. Reading and understanding the text.
2. Reviewing lecture notes and connecting them to the text.
3. Practicing problems.
4. Learning Stata data skills.

If you miss a class, feel free to come to office hours or send an email to schedule a meeting after due diligence of getting and studying the notes from a classmate.

Just because I do not make attendance a component of your grade, this does not mean I don't think it's important. It means I will be treating you as adults who accept responsibility for their choices.

## V. Rough Course Outline

| Week | Day | Dates  | Notes                      | Topic                          | Chpt     |
|------|-----|--------|----------------------------|--------------------------------|----------|
| 1    | W   | 26-Aug |                            | Intro, Review of Probability   | Chpt 1,2 |
| 1    | F   | 28-Aug |                            | Review of Probability          | Chpt 1,2 |
| 2    | M   | 31-Aug |                            | Review of Estimation           | Chpt 3   |
| 2    | W   | 2-Sep  | <b>Assign HW1</b>          | Review of Estimation           | Chpt 3   |
| 2    | F   | 4-Sep  |                            | Stata                          | Handout  |
| 3    | M   | 7-Sep  | <b>Assign Data Summary</b> | Review of Estimation           | Chpt 3   |
| 3    | W   | 9-Sep  |                            | Simple Regression              | Chpt 4   |
| 3    | F   | 11-Sep | <b>HW1 due</b>             |                                |          |
| 4    | M   | 14-Sep |                            | Simple Regression              | Chpt 4   |
| 4    | W   | 16-Sep |                            | Simple Regression              | Chpt 4   |
| 4    | F   | 18-Sep | <b>Assign HW2</b>          | Simple Regression              | Chpt 4   |
| 5    | M   | 21-Sep |                            | Hypothesis Tests in OLS        | Chpt 5   |
| 5    | W   | 23-Sep |                            | Dummy Regressors               | Chpt 5   |
| 5    | F   | 25-Sep |                            | <b>In-class Presentation</b>   |          |
| 6    | M   | 28-Sep | <b>HW2 due</b>             | Heteroskedasticity             | Chpt 5   |
| 6    | W   | 30-Sep |                            | Multiple Regression            | Chpt 6   |
| 6    | F   | 2-Oct  |                            | Multiple Regression            | Chpt 6   |
| 7    | M   | 5-Oct  | <b>Midterm I</b>           | <b>Midterm I in evening</b>    |          |
| 7    | W   | 7-Oct  |                            | Multiple Regression            | Chpt 6   |
| 7    | F   | 9-Oct  |                            |                                |          |
| 8    | M   | 12-Oct |                            | Multiple Regression            | Chpt 6   |
| 8    | W   | 14-Oct |                            | F-tests                        | Chpt 7   |
| 8    | F   | 16-Oct | <b>Fall Break</b>          |                                |          |
| 9    | M   | 19-Oct |                            | Choosing Independent Variables | Chpt 7   |
| 9    | W   | 21-Oct |                            | Nonlinear Regression           | Chpt 8   |
| 9    | F   | 23-Oct | <b>Data Summary Due</b>    | Nonlinear Regression           | Chpt 8   |
| 10   | M   | 26-Oct | <b>Assign HW3</b>          | Nonlinear Regression           | Chpt 8   |
| 10   | W   | 28-Oct |                            | Interaction Variables          | Chpt 8   |
| 10   | F   | 30-Oct |                            | Interaction Variables          | Chpt 8   |

|    |   |        |                           |                               |         |
|----|---|--------|---------------------------|-------------------------------|---------|
| 11 | M | 2-Nov  |                           | Assessing Multiple Regression | Chpt 9  |
| 11 | W | 4-Nov  | <b>HW3 due</b>            | Assessing Multiple Regression | Chpt 9  |
| 11 | F | 6-Nov  |                           |                               |         |
| 12 | M | 9-Nov  | <b>Midterm II</b>         | <b>Midterm II in evening</b>  |         |
| 12 | W | 11-Nov |                           | Panel Data                    | Chpt 10 |
| 12 | F | 13-Nov |                           | Panel Data                    | Chpt 10 |
| 13 | M | 16-Nov |                           | Instrumental Variables        | Chpt 12 |
| 13 | W | 18-Nov |                           | Instrumental Variables        | Chpt 12 |
| 13 | F | 20-Nov |                           | Instrumental Variables        | Chpt 12 |
| 14 | M | 23-Nov |                           | Binary dependent variables    | Chpt 11 |
| 14 | W | 25-Nov | <b>Thanksgiving Break</b> | Binary dependent variables    | Chpt 11 |
| 14 | F | 27-Nov | <b>Thanksgiving Break</b> | Binary dependent variables    | Chpt 11 |
| 15 | M | 30-Nov |                           | Binary dependent variables    | Chpt 11 |
| 15 | W | 2-Dec  |                           | Time Series/ As time allows   | Chpt 14 |
| 15 | F | 4-Dec  | <b>Final paper due</b>    | Experimental/ As time allows  | Chpt 13 |

The final exam for 12:00-12:50pm is December 9<sup>th</sup> at 2pm.

The final exam for 1:00-1:50pm is December 7<sup>th</sup> at 2pm.

## VI. Electronic Device Policy

Laptops may NOT be used during lecture, except during Stata session. Why? This class is full of equations and Greek letters, not good for efficient computer notes. Taking notes electronically will be time-consuming and lead to missing explanations- I'm just making this "heads up" mandatory.

I will announce ahead of time which days are Stata classes, so you can bring your laptop on those days.

Cell phones must be **muted** and **stowed away** during class. This is out of respect for your classmates, your instructor, and your own learning. **If you don't want to learn, don't show up.** Your Facebook checking and texting is much more efficient without me interrupting. Texting makes you a cold call target.

## VII. Evaluation and Grading

You will be evaluated on both individual and group activity as detailed below:

2 Midterms: 40% (20 % each)

Final: 20%

Group Project Part II: 20%

Group Project Part I: 10%

Homeworks (3): 10%

Total 100%

Group Project: You will complete a group project as a part of a team (3-4 individuals). The project will be done in teams, but one-third of your project score will be determined by your team members' evaluations of your performance. The project has two components, and Part II will include a revised version of Part I. The goal of the group project is to give you an opportunity to use the tools and concepts learned in class to evaluate data of interest to you. **Start thinking – what is cool data?! Do you have data from a student activity you're involved in?**

Make-Up Exam policy: There will be **no makeup exams** for a missed exam. Individual rescheduling is only considered with a university-approved absence brought to the professor at least 2 weeks ahead of time. If you have a letter registered with the Learning Assistance Center & Disability Services, you must inform the instructor within 2 weeks of the exam in order to schedule accommodation.

Re-Grade policy: Students requesting that their exam must be re-graded have to submit their original exam with a written note explaining the reason for their re-grade request within 2 class days of the time the exams are returned. Any exam submitted for a re-grade will be subject to a complete re-grade by the instructor.

The course syllabus is a general plan; deviations will be announced to the class by the professor.