The College of William & Mary
Department of Economics

Course: ECON 308-04 - Econometrics

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Office Hours: 10:50-12:20 TTH and by appointment.

Prerequisites: ECON 101, 102 and 307*
*__Note__: To meet the prerequiate students may use BUAD 231, MATH 106, MATH 351, or SOCL 353 in place of Econ 307.

Class Material:

- **Textbook**: Stock, James H. and Mark W. Watson. 2019. **Introduction to Econometrics**, 4^{th} Addison-Wesley.
- **Lecture Slides**: The class material (lecture notes, homework, . . .) will be placed on the course's blackboard site.
  - All homework, data, and most of the material for this class will be handled through this means.
  - I teach using slides, mostly, which also serve the purpose of lecture-notes.
  - I will use some of the examples from the text and the same notation, but I will change the order of the topics. In the slides I will always refer to the section of the book I am considering.
- **Computer Software**: Stata will be the main software for this class.
  - Assignments will require this program. Stata is available on the Public Access Computer (PAC) labs around campus. You may also access Stata from your computer by ssh into `stat.wm.edu` using your WMuserid and password.
  - Stata GradPlan offers discounts to WM students if you would like to purchase Stata. More information about Stata at WM can be found ***HERE***
  - Finally, if you are not familiar with Stata, some good online resources include:
    * ***IDRE*** at UCLA offers detailed tutorial videos and webpages here (note that some commands on this website are outdated)
    * ***Carolina Population Center's*** version is quite well-organized.
    * ***Pfaff's*** - A Brief Introduction to Stata with 50 plus Basic Commands
- **Data:** The Data for the course's lectures and graded material will come from ***HERE***

Course Objectives: This is a course in applied econometrics, emphasizing the implementation of modern econometric techniques to analyze concrete economic problems, using real data and recent econometric software. Though not a theoretical course, we will introduce some basic theory and concepts to motivate an appropriate use of the methods. After passing this class students should have learned to to:

- Build, estimate and interpret their own econometric models for concrete economic problems.
- Write professional reports/papers using econometric methods.
- Use recent professional software for econometric and statistical analysis.
- Collect, use and analyze real data sets.

Course Outline:

- **Part I**
  1. The two-variable linear regression model & least squares estimation ..... Chapter 4
  2. Hypothesis testing ..... Chapter 5
- **Part II**
  3. The k-variable linear model ..... Chapter 6
  4. More hypothesis tests ..... Chapter 7
  5. Functional form ..... Chapter 8
- **Part III**
  6. Diagnostic testing ..... Chapter 9
  7. Instrumental variables ..... Chapter 12
- **Part IV**
  8. Experiments ..... Chapter 13
  9. Panel Data ..... Chapter 10
- **Part V**
  10. Limited dependent variable models ..... Chapter 11
  11. Introduction to Time Series ..... Chapters 14 & 15

Course Grade Policy: Your grade in the course will be determined by your performance on the following assignments:

Problem Sets (5) 15%
Exams (4) 40%
Final Exam (1) 25%
Term Paper (1) 10%
PollAnywhere 10%

Grades will be distributed as follows:

A	93 - 100%	C	73 - 76.99%
A-	90 - 92.99%	C-	70 - 72.99%
B+	87 - 89.99%	D+	67 - 69.99%
B	83 - 86.99%	D	63 - 66.99%
B-	80 - 82.99%	D-	60 - 62.99%
C+	77 - 79.99%	F	less than 60%

Tentative Schedule:

Monday	Tuesday	Wednesday	Thursday	Friday
1/25	1/26	1/27	1/28 Syllabus & Overview of Course	1/29
2/1	2/2 Review of the Bivariate Model	2/3	2/4 Review of the Bivariate Model	2/5
2/8	2/9 Review of Hypothesis Testing	2/10	2/11 Review of Hypothesis Testing	2/12 ***Spring Break Day***
2/15	2/16 ***Problem Set #1*** The k-variable Model	2/17	2/18 ***Exam #1***	2/19
2/22	2/23 Additional Hypothesis Testing	2/24	2/25 Additional Hypothesis Testing	2/26
3/1	3/2 Functional Form	3/3	3/4 ***Spring Break Day***	3/5
3/8	3/9 Functional Form	3/10	3/11 ***Problem Set #2*** Model Diagnostics	3/12
3/15	3/16 ***Exam #2***	3/17 ***Spring Break Day***	3/18 Model Diagnostics	3/19
3/22	3/23 Instrumental Variables	3/24	3/25 Instrumental Variables	3/26
3/29	3/30 ***Problem Set #3*** Experiments	3/31	4/1 ***Exam #3***	4/2

Monday	Tuesday	Wednesday	Thursday	Friday
4/5	4/6 ***Spring Break Day***	4/7 ***Spring Break Day***	4/8 Experiments	4/9
4/12	4/13 Panel Data	4/14	4/15 Panel Data	4/16
4/19	4/20 ***Problem Set #4*** Binary Dependent Variables	4/21	4/22 ***Exam #4***	4/23
4/26 ***Spring Break Day***	4/27 Introduction to Time Series	4/28	4/29 Introduction to Time Series	4/30
5/3	5/4 Introduction to Time Series	5/5	5/6 Review	5/7
5/10	5/11 ***Problem Set #5***	5/12	5/13	5/14 ***Final Exam*** ***900-1200*** ***Term Paper***