

**ECON335 Introduction to Econometrics**  
**Summer 2017**  
**Instructor: Dr. Anita Alves Pena**

**Contact:**

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**Class Meetings:**

Clark C250

MTWRF 12-2pm

**Regular Office Hours and Policy:**

MTWRF 2-2:30pm on class days; please note that I will *not* generally be available to answer questions before class even on days that something is due. You should therefore *plan ahead* and ask me the previous day and/or work with your classmates. *I will not hold office hours on Tuesday, May 30 due to a prior commitment. Please make a note of this now.*

**Course Website:**

login at <http://canvas.colostate.edu>

Make sure that your email is set to receive announcements from this system. In the uncommon circumstance that I have to cancel regular class or office hours, I will announce this on the course website.

**Textbook (required):**

James H. Stock and Mark W. Watson: Introduction to Econometrics 3rd edition

**Statistical Software (required):**

I recommend Gretl, which can be downloaded from <http://gretl.sourceforge.net> free of charge. (Note that both Windows and Mac versions are available by clicking on the links on the left-hand side of the main page.) However, if you are already familiar with alternative commercial software (e.g., STATA, SAS, EViews), you are welcome to use it for problem sets as long as you circle or highlight your answers. Since datasets for homeworks will be provided in Gretl format, it will be up to you to convert files for use with different software. Furthermore, I may or may not be able to answer questions about alternative software depending on what it is.

**Course Objectives/Intended Learning Outcomes:**

Estimating statistical regression models of economic relationships; treatment of special problems that may arise in analysis of economic data. Econometrics is designed to provide you with understanding and ability to apply the tools that economists use in empirical investigations. Econometrics applies statistical and mathematical methods to the analysis of data to test economic theories and estimate relationships. This course is difficult but will provide practical skills and therefore should be extremely valuable after completing the class successfully.

After completing the course, a successful student should be able to:

1. understand the nature and scope of economics as a social science.
2. use statistical analysis, including the classical regression model, to estimate relevant economic parameters, predict economic outcomes, and test economic hypotheses using quantitative data.
3. understand the basic assumptions of the classical linear regression model, and identify and correct (if possible) any violations of these assumptions, such as autocorrelation and heteroskedasticity.
4. develop and maintain a working knowledge of econometrics that will provide a basic foundation for future study in econometrics and statistical techniques.

**Prerequisites:**

ECON 202 (Principles of Microeconomics); ECON 204 (Principles of Macroeconomics); MATH 141 (Calculus in Management Sciences) or MATH 155 (Calculus for Biological Scientists I) or MATH 160 (Calculus for Physical Scientists I); and STAT 201 (General Statistics) or STAT 204 (Statistics for Business Students) or STAT 301 (Introduction to Statistical Methods) or STAT 307 (Introduction to Biostatistics). The prerequisites for the course for degree-seeking student will be enforced. Econometrics **REQUIRES** mathematical and statistical methods.

**Grading:**

Grades will be based on:

- three problem sets (that require both written and computer work) (30%)
- three exams (30%)
- short quizzes on chapter readings/lectures and class participation (10%)
- individual final project (20%)
- presentation of individual project (10%)

Final letter grading will follow the traditional system that *does* include plus and minus grades with cutoffs for plus and minus determined at the instructor's discretion at the end of the course.

The formula is a standard weighted average where each category is scaled by the total number of points available. If for example you receive 80/100 on the final project, you should multiply this by 0.1 to see the contribution of the paper to your final score. The same goes for other categories, and adding these gets to the final score. This is a 300-level course, and the work level and grading is according to that standard.

**CAUTION:** You will NOT pass this class if you do not do the computer work for the problem sets and individual final project in addition to the written portions of homeworks and exams. Exams will include both multiple choice and written questions. Projects will be based on data analysis and interpretation pertaining to a question that interests you. The final project should reflect a significant amount of independent work.

You should expect to be actively involved. You are expected to arrange your schedule so that you attend class at the scheduled time on a regular basis. To encourage regular attendance and

participation, *quiz dates will not be announced*. If you are late or absent, you will *not* be able to make-up the quiz or receive extra time.

There are no extra credit activities. *Therefore, please do not ask me for extra credit at the end of the course*. It is your responsibility to understand the grading scheme above from the beginning and to plan accordingly.

**Contact Hours and Expectations for Work Outside of Instructional Time:**

This is a three credit course taught over 10 hours per week for 4 weeks. The federal credit hour definition requires two hours of outside work (reading textbook chapters, research) for each contact hour of instructional time. You therefore should plan to spend 20 hours per week of outside time. You should expect this general level of intensity throughout the class, though there may be some variation from day to day.

**Policy on Section Attendance:**

You are expected to be present in class and are responsible for material covered whether or not that material is covered posted online. If you miss class, it is your responsibility to find out *from your classmates* what you missed. Given that many class sessions will incorporate group-based work, you should attend the section in which you are enrolled. As per University policy, students are exempted from attending class for University sanctioned activities *with appropriate official documentation*. In general, with evidence of a sanctioned activity, you may be able to arrange to turn in materials *early*.

**Other Course Policies:**

Disruptive behavior is not tolerated and is grounds for being asked to leave. This includes the use of cell phones and reading newspapers and other unrelated material in class. Offensive or threatening treatment of an individual is especially not tolerated. Disruptive students will be referred to University officials. *In general, I will expect that you will be respectful of me and your classmates and that you will take the course seriously.*

**Department Statement on Copyright:**

Please do not share material from this course in online, print or other media. Course material is the property of the instructor who developed the course. Materials authored by third parties and used in the course are also subject to copyright protections. Posting course materials on external sites (commercial or not) violates both copyright law the CSU Student Conduct Code. Students who share course content without the instructor's express permission, including with online sites that post materials to sell to other students, could face disciplinary or legal action.

**Academic Integrity:**

This course will adhere to the CSU Academic Integrity Policy as found on the Student Responsibilities page of the CSU General Catalog and in the Student Conduct Code. At a minimum, violations will result in a grading penalty in this course and a report to the Office of Conflict Resolution and Student Conduct Services.

As per university policy, "Any student found responsible for having engaged in academic misconduct will be subject to academic penalty and/or University disciplinary action" (General

Catalog, <http://catalog.colostate.edu/general-catalog/policies/students-responsibilities/>). As such, any academic dishonesty in this course may result in a grade of "F" for the course and may be reported to the Office of Conflict Resolution and Student Conduct Services. Please be aware that the General Catalog specifically identifies the following examples of academic dishonesty: cheating, plagiarism, unauthorized possession or disposition of academic materials, falsification, and facilitation of cases of academic dishonesty. Plagiarism is defined as follows: "Plagiarism – Plagiarism includes the copying of language, structure, images, ideas, or thoughts of another, and representing them as one's own without proper acknowledgment and is related only to work submitted for credit; the failure to cite sources properly; sources must always be appropriately referenced, whether the source is printed, electronic or spoken. Examples include a submission of purchased research papers or homework as one's own work; paraphrasing and/or quoting material without properly documenting the source" (General Catalog, <http://catalog.colostate.edu/general-catalog/policies/students-responsibilities/>).

**Accommodations:**

Students requesting special accommodations should contact Resources for Disabled Students (RDS) at 970-491-6385. Accommodations for exams will not be granted without pre-approval from RDS. If this applies to you, please make arrangements immediately.

**Title IX:**

CSU's Discrimination, Harassment, Sexual Harassment, Sexual Misconduct, Domestic Violence, Dating Violence, Stalking, and Retaliation policy designates faculty and employees of the University as "Responsible Employees." This designation is consistent with federal law and guidance, and requires faculty to report information regarding students who may have experienced any form of sexual harassment, sexual misconduct, relationship violence, stalking or retaliation. This includes information shared with faculty in person, electronic communications or in class assignments. As "Responsible Employees," faculty may refer students to campus resources (see below), together with informing the Office of Support and Safety Assessment to help ensure student safety and welfare. Information regarding sexual harassment, sexual misconduct, relationship violence, stalking and retaliation is treated with the greatest degree of confidentiality possible while also ensuring student and campus safety.

Any student who may be the victim of sexual harassment, sexual misconduct, relationship violence, stalking or retaliation is encouraged to report to CSU through one or more of the following resources: Emergency Response 911, Deputy Title IX Coordinator/Office of Support and Safety Assessment (970) 491-1350, Colorado State University Police Department (non-emergency) (970) 491-6425. For counseling support and assistance, please see the CSU Health Network, which includes a variety of counseling services that can be accessed at: <http://www.health.colostate.edu/>. The Sexual Assault Victim Assistance Team is a confidential student resource that does not have a reporting requirement: <http://www.wgac.colostate.edu/need-help-support>

## **Syllabus and Reading List:**

(This schedule is subject to change and will be revised later in the semester if necessary.)

### Week 1:

Economic Questions and Data, S&W Chapter 1

Review of Probability, S&W Chapter 2.

Review of Statistics, S&W Chapter 3

Linear Regression with One Regressor, S&W Chapter 4.

THURSDAY, MAY 18: PROBLEM SET 1 DUE, START OF CLASS

FRIDAY, MAY 19: EXAM 1 IN CLASS

### Week 2:

Hypothesis Tests and Confidence Intervals (One Regressor), S&W Chapter 5.

Linear Regression with Multiple Regressors, S&W Chapter 6.

Hypothesis Tests and Conf. Intervals (Multiple Regressors), S&W Chapter 7.

THURSDAY, MAY 25: PROBLEM SET 2 DUE, START OF CLASS

FRIDAY, MAY 26: EXAM 2 IN CLASS

### Week 3:

MONDAY, MAY 29: NO CLASS OR OFFICE HOURS, UNIVERSITY HOLIDAY

Nonlinear Regression Functions, S&W Chapter 8

Assessing Econometric Studies, S&W Chapter 9.

Regression with a Binary Dependent Variable, S&W Chapter 11.

THURSDAY, JUNE 1: PROBLEM SET 3 DUE, START OF CLASS

FRIDAY, JUNE 2: EXAM 3 IN CLASS

### Week 4:

Regression with Panel Data, S&W Chapter 10.

Introduction to Time Series Regression and Forecasting, S&W Chapter 14.

THURSDAY, JUNE 8: INDIVIDUAL FINAL PROJECT DUE, START OF CLASS

THURSDAY, JUNE 8 and FRIDAY, JUNE 9: FINAL PRESENTATIONS IN CLASS