University of Colorado at Boulder - Department of Economics
Econ 4818 - Introduction to Econometrics
Professor Carlos Brunet Martins-Filho
Fall 2024

Office. Economics Building 105.

Meetings. TR 12:30 PM - 1:45 PM at ECON 117.

Office hours. TR 3:30 PM - 4:30 PM. If you need an appointment outside these hours send an email to carlos.martins@colorado.edu and I will try to accommodate your request.

Prerequisites. ECON 3070 and ECON 3818 or one of the following approved statistics substitutes: APPM 4570, CHEN 3010, CSCI 3022, CVEN 3227, MATH 3510, MATH 4520, STAT 3100, STAT 4000, STAT 4520 (all minimum grade C-).

Class URL. http://spot.colorado.edu/~martinsc/4818.html.

Course description and objectives.

The Math Refresher A - Basic Mathematical Tools in the textbook is pre-requisite knowledge for this course. Study and/or refresh your knowledge of its content.

All readings, chapters and sections are from the textbook. It is also important to take good notes in class. Some of what I write on the blackboard will not be in the book.

1. The nature of econometrics and economic data: chapter 1 and handout called **Econometrics**

2. Math Refresher B - Fundamentals of probability

3. Math Refresher C - Fundamentals of Mathematical Statistics

4. The simple linear regression model and the least squares estimator: chapter 2.

5. Advanced Treatment D - Summary of matrix algebra

6. Multiple linear regression (MLR) model and the least squares estimator: chapter 3 and Advanced Treatment E - The linear regression model in matrix form

7. Hypothesis testing for the MLR model under normality: chapter 4.

8. Asymptotic properties of the least squares estimator and Hypothesis testing for the MLR model under non-normality: chapter 5.

9. Data scaling, dealing with data transformations, regressor selection, goodness-of- t and prediction: chapter 6.

10. Regression with binary variables: chapter 7.

11. Accounting for heterocedasticity: chapter 8.

12. Functional form misspeci cation, regressor misspeci cation, measurement error: chapter 9, sections 9.1-9.4.

13. Instrumental variable estimation: chapter 15.

Important information.

Classroom behavior

Preferred student names and pronouns

CU Boulder recognizes that students' legal information doesn't always align with how they identify. Students may update their preferred names and pronouns via the student portal; those preferred names and pronouns are listed on instructors' class rosters. In the absence of such updates, the name that appears on the class roster is the student's legal name.

Honor code

All students enrolled in a University of Colorado Boulder course are responsible for knowing and adhering to the Honor Code. Violations of the Honor Code may include but are not limited to: plagiarism (including use of paper writing services or technology [such as essay bots]), cheating, fabrication, lying, bribery, threat, unauthorized access to academic materials, clicker fraud, submitting the same or similar work in more than one cotionone4(one)-scv(one)-3304(onec5re04(one4(on1(b)-28(p(thed(.Euns)]TJIIter)-33-scv(on