University of Colorado Boulder INTRODUCTION TO ECONOMETRICS ECON 4818

distribution, sports management, urban planning, voting prediction, race issues, environmental conservation, climate change, just to name a few.

## **COURSE OBJECTIVES**

By the end of the course, you should be able to:

- 1. Explain the assumptions of the simple and multiple linear regression model
- 2. Conduct econometric analysis of the linear regression model using statistical packages
- 3. Make and test inferences in the linear regression model
- 4. Formulate a novel but straightforward question and test it using real world data
- 5. Communicate the results of econometric analysis in a clear and professional way

## **COURSE PREREQUISITES**

Requires prerequisite courses of ECON 3070 (Intermediate Microeconomic Theory) and ECON 3818 (Introduction to Statistics with Computer Applications) or STAT 4520 or APPM 4570 or CHEN 3010 or CSCI 3022 or CVEN 3227 or MATH 4520 (all minimum grade C-).

#### REQUIRED COURSE MATERIALS

Textbook (required):

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turned OFF, and you will have no way to complete assignments.

You will access Mindtap through our course website, Canvas. For options and support see: https://www.cengage.com/coursepages/UC\_Mindtap

Course Website: <a href="https://canvas.colorado.edu/">https://canvas.colorado.edu/</a> (Canvas) Grades and any further additional readings will be posted on Canvas. Please check Canvas frequently for any relevant notifications/changes that may occur throughout the course.

Statistical package: R is a free programming language that is available for Mac, Windows, and Unix operating systems. It is pre-installed on computers in most University computer labs and can be downloaded from the Internet. You will use the R Studio Interface to do R exercises. We will spend some of our class/recitation time working on these. R has good self-contained documentation in the basic R installation.

On your first R exercise you will get some basic training on how to install and do some basic operations in R. I will help you through the semester. An additional free resource is the book Modern R with the tidyverse by Bruno Rodrigues:

https://b-rodrigues.github.io/modern\_R/

This free e-book provides instruction on programming in R. But mainly we are going to implement the things we learn from the book in R. You are welcome to use other programming packages if you are proficient in them, but direct support will be provided only in R

#### INSTRUCTIONAL METHODOLOGY AND DELIVERY

This course is delivered via distance education format using the CU Canvas system. This format will use a combination of readings, online discussion, and other web-based resources. You will interact with the instructor and other students using the communication functions provided by Canvas. You will submit assignments in accordance with the course outline using Canvas.

#### COURSE PRESENTATION AND PROCEDURES

There will be 14 modules corresponding to the 14 weeks of the course (1 module per week). You should proceed through one module per week, which will be comprised of readings from the course texts, supplemental class notes, graded discussion questions, homework and quizzes, exams, and various outside sources of information such as additional readings and video content, among other content.

#### **COURSE OUTLINE**

Review the separate weekly class schedule

## **CLASS PARTICIPATION**

This course is designed to engage you mostly through exercises, however, there will be 3 to 4 class

ECON 4818: Introduction to Econometrics

#### **TUTORING**

The Economics Department provides a free drop-in tutorial office which offers assistance on all core courses in the major, and occasionally on other undergraduate courses in the Department. Its website is <a href="https://www.colorado.edu/economics/node/513/attachment">https://www.colorado.edu/economics/node/513/attachment</a>.

The Economics Department maintains a list of tutors who are available for private hire. Its website is <a href="https://www.colorado.edu/economics/node/515/attachment">https://www.colorado.edu/economics/node/515/attachment</a>.

## **TECHNOLOGY SUPPORT**

CU Boulder uses Canvas.

Here is the list of recommended system requirements: <u>Canvas Computer Specifications Page</u>
Here is the detailed list of internet browsers in Windows, MacOS, iOS and Android: <u>Supported Browsers</u>
Page

## **Technical Support**

Canvas technical support. If you are experiencing issues with Canvas please contact:

- o CU Boulder's Help desk at 303-735-4357 (5-HELP) or <a href="help@colorado.edu">help@colorado.edu</a>. 5-Help will answer your call: Monday through Friday from 7:30 a.m. to 7:00 p.m., Saturday and Sunday from noon to 6:00 p.m., Closed during <a href="help@colorado.edu">University Holidays</a>
- o the left side of Canvas, once logged in within the Canvas App, you can search the Canvas support guides, Report a Problem or chat with Canvas Support 24 hours a day, 7 days a week.

Connect tech support:

o http://mpss.mhhe.com/ or http://bit.ly/StudentRegistration

## COURSE POLICIES.

Course Withdrawal Policy: Any student who wishes to withdraw from the course must submit a request directly to <u>Continuing Education</u>. For complete information, please visit their website at <a href="https://ce.colorado.edu/resources/topics/dates-and-deadlines-general-info/">https://ce.colorado.edu/resources/topics/dates-and-deadlines-general-info/</a>

#### POLICY ON DUE DATES

Each lecture you will complete Problem Sets, Quizzes, R Exercises and sometimes discussion posts. It is your responsibility to turn in each assignment on the required date. Exercises or discussion postings turned in after the scheduled due date will be lowered to the next letter grade for each 12-hour period late. The exceptions that may be considered is due to sickness, university excused function, or

grounds constitutes a reasonable excuse for missing or submitting a late work assignment, the right to require the student to submit proper verification of such excuse.

# NETIQUETTE

All students should be aware that their behavior impacts other people, even online. I hope that we will all

# ECON 4818: Introduction to Econometrics

Members of the CU Boulder community and visitors to campus must follow university, department, and building health and safety requirements and all applicable campus policies and public health guidelines to reduce the risk of spreading infectious diseases.

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intimate partner violence (dating or domestic violence), stalking, protected-class discrimination and harassment, and related retaliation by or against members of our community on- and off-campus. These behaviors harm individuals and our community. The Office of Institutional Equity and Compliance (OIEC) addresses these concerns, and individuals who believe they have been subjected to misconduct can contact OIEC at 303-492-2127 or email cureport@colorado.edu. Information about university policies, reporting options



			11:59pm MST/MDT
1 (1/22)	Appendix A: Mathematical Tools	Discussion post Assignment Module 1 Discussion comment Homework Module 1	Thursday 1/25 Thursday 1/25 Sunday 1/28 Sunday 1/28
2 (1/29)	Appendix B: Fundamentals of Probability	Exercise Module 2 Homework Module 2	Thursday 2/1 Sunday 2/4
<b>2</b> (2/5)	Appendix C Fundamentals of Mathematical Statistics	Exercise Module 3 Homework Module 3	Thursday 2/8