California State University, Fresno
Department of Economics
ECON 123: Introduction to Econometrics (Sections: 01 & 02)
Fall 2022
M-W 8:00am - 9:50am

Instructor: Dr. David Vera.

Email: dvera@csufresno.edu. Write ECON 123 in the subject line*

Office Hours: Dr. Vera M: 1:00pm to 2:00pm, PB 315.

Zoom link: Dr Vera's virtual OH https://fresnostate.zoom.us/j/765862526.

Textbook: "Real Econometrics" by M. Bailey, Oxford University Press, 2017.
Bookstore link

Class website   Data, problem sets R code and other material will be posted on Canvas.

Prerequisites: ECON 40, ECON 50 and MATH 11 or MATH 101 or DS 73 or PSYCH 42 passed with C grade.

Notice: This syllabus and schedule are subject to change in the event of extenuating circumstances. If you are absent from class, it is your responsibility to check on announcements made while you were away. We expect to be able to reply to emails within a 48-hour window. Any significant changes will be posted on Class Announcements in Canvas.

Updates on COVID, e.g. campus policy, testing etc, can be found at: https://covid.fresnostate.edu/

Course Description: This course will introduce students to the basic principles of statistical data analysis in economics. Students will learn how economic data are used with economic and statistical models as a basis for estimating key economic parameters, testing economic hypotheses and understanding economic outcomes.

Student Learning Outcomes:

- Students will apply formal logical, statistical, and econometric analyses, in order to evaluate a wide array of hypotheses, qualitative and quantitative evidence and interpret the results.

- Students will practice independent economic research, including -but not limited to - use of professional and scholarly resources, secondary source materials, and statistical/econometric analyses.

- Students will evaluate and explain economic concepts by applying econometric tools using an open source econometric software.

- Students will become proficient in basic econometric analysis that is transparent and reproducible.

Word of Warning

ECON 123 requires you to do a lot more work outside of class than you are probably used to. Therefore, expect to devote a fair amount of time outside of class (at times more than six hours per week) to study and to complete assignments. Do not wait until you have fallen behind to talk to me or to see me during virtual office hours; if you have questions on the material or homework come to office hours or ask me at the end of the session. The way to succeed in this class is to stay ahead of the curve. It may take you more than one read to digest the material from a given chapter so read often and use a highlighter. Consider joining/starting a study group to work on homework and prepare for the exams. Study groups can also help you bounce off ideas for your own research.

Class format

The course will be in the form of lectures delivered by the instructor along with class discussions. Also, computer laboratory sessions are associated with this course. The laboratory sessions will consist of complementary instruction, computing tips necessary to complete assignments as well as topics that may not be covered during regular class hours.

Students are expected to: (1) be on time to attend each class and each computer laboratory session, (2) actively participate in class discussions by reading material ahead of time, (3) behave appropriately in class (not reading the newspaper, texting, sleeping, coming in late or leaving early, or in any other way disturbing the instructor or other students in the classroom), (4) behave with honesty

Students are prohibited from any unauthorized recording, dissemination, or publication of class material, including any material posted on Canvas, for any commercial purpose. In addition, students may not record or use class material in any manner that would violate copyright law.

R and RStudio

The open source statistical package **R** and the interface **RStudio** will be used throughout the course.[†] The instructor will teach students the basic steps to use this statistical package during lab sessions and all the necessary code will be provided in class. You will be using **RStudio** to complete class homework, exams as well as your research project. Both **R** and **RStudio** are free; Instructions on how to install them on your personal computer are available on Canvas.

[†]More precisely "RStudio is an integrated development environment (IDE) for R. It includes a console, syntax-highlighting editor that supports direct code execution, as well as tools for plotting, history, debugging and workspace management."

Practice Problems, Exams and Grading:

1. **Course Requirements**

    (a) Problem sets (10%)

    (b) Quizzes (5%)

    (c) Attendance and Participation (see attendance policy below) (5%)

    (d) Midterm Exam: Week #9 of the semester (20%)

    (e) Research Project (40%)

    (f) Cumulative Final: Wednesday, Dec 14th, 8:45 a.m - 10:45 a.m. (20%)

2. **Problem sets:** You **must** submit your own answers to these problem sets. You may work on the assignment with other students, but you must turn in your own individual answer. **Your answer can not be copied from another student.** The problem sets are designed to help you prepare for the exams and provide practical applications of econometrics. Stop by during my office hours if you have questions about the problem sets. You will submit your answers through Canvas. **Late homework will be heavily penalized.**

3. There will be a quiz for each new chapter to be covered in class. The first quiz will be in Week #2. Reading the chapter beforehand can help your understanding of the material. The quizzes are meant to check that you have done the reading before class. I will throw out the quiz with the lowest grade.[‡]

4. The Midterm Exam and Cumulative Final must be taken at the scheduled time and place; they will not be given at a different date.

5. No make-up exams will be given in this class. Students who miss the midterm with a university accepted excuse will have the weight of the final exam increased accordingly (final exam will be worth 40%).

6. **Attendance policy:** It is utmost important to be actively engaged in this class. Remember, each topic or subject is highly related to the previous one, and as you miss classes, it will get harder to grasp the material. Think of class time as your time to engage with the material and ask your questions. I will be looking at class participation during class time as well as engagement with class material on Canvas at different times than class time and/or when you attend office hours. I will take attendance on a random basis. Assuming you are actively engaged in class "Attendance and Participation" is graded in the following manner:

[‡]This also means that you can miss a quiz without any penalty.

Class misses	Attendance
1-2	5%
3-4	3%
5 or more	0%

7. **Research Project:** The project consists of designing, estimating, and analyzing regression model(s). This is an individual project. You will be using **RStudio** for estimating your model(s). The goal is to produce a research project that is transparent and reproducible. Here is a projected timeline (I will give specific instructions for each of the items below as the semester progresses):

   - Possible Topics & data ideas. Due: Week 8 (10 points).
   - Project proposal & Outline. Due: Week 11 (5 points).
   - Data Report. Due: Week 13 (20 points).
   - Rough Draft. Due: Week 14 (10 points).
   - Presentation. Due Week 15 (20 points).
   - Final Project. Due Week 16, Wednesday December 7th (35 points).

   Additional 5 points will be awarded to the final project if you use RMarkdown (a file type in RStudio) to write your paper, and if your paper can be reproduced with one single click (I will give more details on RMarkdown and one-click reproducibility later in the semester.)

   The electronic submission of your final project should include the following components:

   (a) A <u>10 page</u> paper (**not including the appendix**). The format is double-space and font size 12. The paper must be written in proper form, containing appropriate citations, using standard English grammar and correct spelling. APA format is acceptable. An appendix containing all tables with descriptives, results and graphs should be included at the end of the paper.

   (b) Raw data and processed data used in the project, so that your results can be verified.

   (c) R script used to estimate your model(s) and obtain your results. Your R script must be commented out so that it will be reproducible.

8. **Grading:** The following breakdown represents the most conservative scale to determine final course grades. However, I reserve the right to apply a curve, depending on the final point distribution.

   A: 90%

   B: 80% to 89%

   C: 70% to 79%

   D: 60% to 69%

   F: below 60%

9. **Plagiarism Detection:** The campus subscribes to Turnitin plagiarism prevention service through Canvas, and you will need to submit written assignments to Turnitin. Student work will be used for plagiarism detection and for no other purpose. The student may indicate in writing to the instructor that he/she refuses to participate in the plagiarism detection process, in which case the instructor can use other electronic means to verify the originality of their work. Turnitin Originality Reports **will not** be available for your viewing.

10. **Class recordings:** Audio and video recordings of class lectures are prohibited unless I give you explicit permission to do it.

UNIVERSITY POLICIES AND SERVICES
University polices on:

1. Adding and Dropping Classes

2. Cheating and Plagiarism

3. Computers

4. Copyright Policy

5. Disruptive Classroom Behavior

6. Honor Code

7. Students with Disabilities

8. Title IX

and University Services, can be accessed through the following link
http://www.fresnostate.edu/academics/curriculum/instruction/policies.html