EC 320: Introduction to Econometrics

University of Oregon
Department of Economics

Instructor:	Jose Rojas-Fallas	**Class Location:**	Asynchronous
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Office Hours:	TBD	**Zoom:**	Zoom Link Goes Here

COURSE SUMMARY

This course introduces statistical techniques that economists use to test economic theories and to estimate the relationships between economic variables. Econometrics combines economics and statistics with data to analyze and measure economic phenomena. In this course, we will focus our attention on regression analysis – the workshorse of applied econometrics. Using calculus and introductory statistics, we will cultivate a working understanding of the theory underpinning regression analysis, emphasizing the assumptions we must make to make causal statements. Satistical programming is fundamental to practicing applied econometrics. Thus we will teach the statistical programming language R to apply insights from theory and learn how to work with data. To the extent that you invest the requisite time and effort, you can leave this course with marketable skills in data analysis and – most importantly – a more sophisticated understanding of the notion that **correlation does not necessarily imply causation**.

SOFTWARE

- We will use the statistical programming language R

- We will use RStudio to interact with R

Learning R is challenging, but well worth the effort. R is a powerful and versatile tool for data analysis and visualization, which makes it popular amongst employers. If you dedicate the time and effort necessary to learn the language, you are likely to reap a handsome return on the job market. I expect that you install R and RStudio on your own computer. Do not worry, **both are free**. I also recommend that you be thoughtful of how you choose to organize your saved scripts, data, and assignments (e.g. Home > Documents > Classes > EC320). For convenience, I make material available through the Course Website

TEXTBOOKS AND OTHER READINGS

Econometrics:

- Introduction to Econometrics, 5th Ed. by Christopher Dougherty (**ItE**)

- Mastering 'Metrics: The Path from Cause to Effect by Angrist and Pischke (**MM**)

You can purchase these through the UO duckstore or your preferred online bookseller. These books are a great primary source of knowledge. I recommend that you read (or at least skim) the assigned readings as you go along. The lectures and the readings are meant to **complement** one another.

R Books:

- R for Data Science by Hadley Wickham and Garrett Grolemund

- Introduction to Econometrics with R by Hanck, Arnold, Gerber, and Chmeizer

These are great open-source resources to help you navigate R.

PREREQUISITES

- Math 242 (Calculus)

- Math 243 (Introduction to Statistics) or equivalent

LABS, ASSIGNMENTS, AND EXAMS

LAB

Although this class is asynchrounous,

PROBLEM SETS & QUIZZES

Every week, there will be **one problem set** as well as a **Canvas quiz** to complete.

Problem sets will primarily focus on analytical problems but may include a computational component. Submission **must be your own work**. You will receive **zero points** for copied work or work generated by an AI tool (ChatGPT, Copilot, Gemini, etc.)

- Due on Friday midnight every week

- **PDF** and **html** are the only file types accepted as submissions

- One file per problem set submission

- Your lowest problem set score will be dropped

Feel free to work together on assignments. Unless explicitly stated, **each student is required to write and submit independent answers**. Any suspicion of of copying or cheating will be viewed as academic dishonesty and be treated as such. In other words: you must place answers **in your own words and written in your own code**. Copying from other people (even if you worked with them) or from previous assignments is considered cheating. Assignments will be submitted on Canvas under the "Assignments" tab.

Quizzes will be short multiple choice or numeric questions to help you check your understanding as the course progresses.

- They will be graded based on completion only to make sure you are following along

Exams will be open-note, but you are not allowed to work with others. All work should be completed independently and in your own words and/or code.

LATE POLICY

- Late assignments will be accepted **up to 36 hours late** with a penalty of **2% per hour late**.

- For example, when submitting 10 hours late, an assignment with a 90% score would be penalized by 20%, resulting in a final grade of 70%.

EXAMS

- The **Midterm** will be a timed Canvas quiz which will be released **DATE TBD**. You will have X hours to complete it and upload your answers.

- The **Final** will be on **DATE TBD**. You will have X hours to complete it and upload your answers.

MAKEUP ASSIGNMENTS

There will be no makeup assignments.

GRADES

GRADING BREAKDOWN

Grades for this class will be assigned based on the following assignments:

- Weekly homework assignments (Problem Sets and Quizzes)

- One Midterm Exam

- One Final Exam

Final course grades are subject to a curve, although it largely depends on the class performance. The weights for the final grade are:

Component	Percentage
Quizzes	15%
Problem sets	15%
Midterm exam	35%
Final exam	35%

Note: While assignments will be submitted on Canvas, due to any potential curving of final grades, the gradebook may be not be accurate – only an approximation. All adjustments of final grades will be done in a local spreadsheet.

TENTATIVE SCHEDULE

Week	Lectures	Readings	Assignments
01	Intro	Syllabus	Install R and RStudio

RECOMMENDATIONS[1]

1. Be kind

2. **Take responsibility** for your own education and try to **learn** as much as you can

3. **Do your own work**

4. Develop your own **intuition**

5. Learn R. Struggle while you try and use Google or LLMs to figure things out

6. Come to **Office Hours** and be ready to ask questions

7. Don't wait until the end of the term to ask for help

8. Start problem sets **early** – so you can come ask for help

ACADEMIC INTEGRITY

I will not tolerate cheating, plagiarism, or any other violations of the Student Code of Conduct. If you are caught cheating or plagiarizing on any component of this course, you will receive a failing grade for the term and I will report your offense to the university.

ACCOMODATIONS

Notify me if there are aspects of the course that pose disability-related barriers to your participation. If you require special accommodation for a documented disability, then you must go through the Accessible Education Center (AEC) so they can formally provide me notice and details of the appropriate accommodations. Please make these arrangements by the end of Week 1.

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[1]Inspired from Professor Ed Rubin