EC 469/549: Introduction to Econometrics Course Syllabus

(Tentative)

Winter 2024

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Web

Office Hours: Monday-Thursday: 1 p.m. – 3 p.m., https://riju.youcanbook.me/

TA: Rachel Pearlman

This is an introductory econometrics course is designed to teach students the basics of simple and multiple regression models with cross-sectional data. In this course we study how statistical and mathematical tools and methods are developed for estimating economic relationships and how to apply these techniques. Throughout the course we will cover standard issues in empirical research pertaining to estimating causal relationship with non-experimental data focusing on economic applications. The specific topics of the course include: univariate and multivariate regression, ordinary least squares, the Gauss-Markov theorem, small and large sample inference, dummy variables, heteroskedasticity, misspecification and selection issues.

Prerequisites

The pre-requisites for this course are ECON 201 and 202, MTH 251, and STAT 243 and 244. This course assumes background knowledge of algebra, probability theory, statistical inference, distribution theory, hypothesis testing, introductory calculus (slopes, derivatives, maximization, and minimization) and matrix algebra. In addition, some knowledge of economic theory will be useful for this course. Inadequate statistics background may make this course more difficult than necessary.

Texts

- Introductory Econometrics, 6th Edition, by Jeffrey Wooldridge. Older editions will also suffice. [Note: a newer 7th edition is now available.]
- Discord
- Discord will be used for all communications! Please join us at <u>https://discord.gg/HGrsWnjcuy</u>
- Please use your full name on discord so that I can identify you!

Stata

Stata is mandatory for this course. One central goal of this course is to provide the students with the knowledge to use and correctly interpret the output of a statistical software package Stata. It is a **user friendly** statistical package that allow you to conduct the analysis without prior programing experience. The Economics Department has a departmental computer lab with Stata equipped computers. Throughout the quarter, I will be holding Stata sessions during the class. Homeworks will have computer exercises that would require Stata. I would recommend purchasing Stata/IC which currently cost \$45 for a six-month student license. **Other statistical packages are not permitted (no exceptions).**

Tentative Course Topics

The nature of econometrics and economic data

- 1. The simple regression model
- 2. Multiple regression model
- 3. Asymptotics
- 4. Further Issues
- 5. Binary variables
- 6. Heteroskedasticity
- 7. Misspecification, missing data etc. (tentative)

Course Expectation

- Homework: 25%
- Midterm Friday, February 8, 2024 (details will be announced later.): 35%
- Final Exam Friday, March 15 2024 (details will be announced later.): 35%
- Writing/Reading assignment: (March 22 2024): 5%
 - The class will be assigned a journal article and students will be required to do submit a reading assignment based on the journal article. Specifically, three/four questions based on the article will be assigned and students are required to submit the answers.

EC 569: The midterm and final exam will have a few (2-4) extra questions!

Homework Assignments

There will approximately 6 homeworks given during the course. Each homework will consist of two part: one written answers and one lab portion. The lab portion of the homework is to be completed in Stata and is to be submitted in a Word file. The homework assignments are **crucial** for students to understand the course material better and prepare for exams. While team work is encouraged on homework

assignments, each student must turn in their own homework. Only partial credit will be given for late submissions.

• Each homework will consist of two parts: one written answers and one lab portion.

Written Answers	Stata Answers
You can type the answers directly on the homework sheet. For some questions, you might have to use Microsoft Equation editor.	The lab portion of the homework is to be completed in Stata and is to be submitted in a Word file. Students are required to type their answers into a word processing document (provided separately).
If you prefer to handwrite your answers, please upload them on Canvas preferably in a .pdf format. I recommend taking photos from your phone and using the free app CamScanner to convert them into pdf files. However, you can also upload pictures of your homework.	Insert only the relevant part of your Stata log file into your document, and clearly explain how you use your Stata output answers the question.
When uploading the scanned copies, please make sure that the uploaded	Copying and pasting your log file into the word document without an
files are clear and legible for grading.	explanation will not be considered a complete answer and will not receive full credit.
Please save the paper-copy of your homework. If the TA is not able to read your uploaded file for some reason, they might ask you to reupload your homework.	Students will also submit the log files for the Stata part of their homework.
Full credit will only be given to properly written answers that are supported by step-by-step calculations.	Please use to AnswerFormattoStataQuestions.doc file as a guide to how to answer the Stata questions.

Practice Quizzes

In addition to the homeworks, there are also 7 Practice Quizzes (PQs) provided. These quizzes are ungraded and would help students looking for more questions for understanding the course material and preparing for the exams.

Exams

If you have a significant reason that you believe would justify rescheduling an exam, you must contact me as soon as possible. Significant reasons that can be anticipated (e.g. any schedule conflicts with final exams, required participation in University sponsored activities, conferences, etc.) must be given to me at least two weeks before the exam. For reasons that cannot be anticipated, see me immediately to make appropriate arrangements. Generally, if circumstances warrant it, makeup exams will only be provided before the regularly scheduled exam. However, the resolution of any conflicts will be handled on a

Zoom Office Hour Policies

Students *must* have their camera turned on for the *entire* office hour visit. No exceptions.

Work Load

The material can be difficult and the workload substantial, particularly for people who find math courses challenging. Mastering the material covered in this course requires a significant amount of work outside of class. However, your payoff for all this work is a set of quantitative and computer skills tools that are extremely useful for designing empirical work with non-experimental data.

Email Etiquette

Students are advised to write emails in a professional and polite manner. Emails should start with student's and class name. Please be concise while stating your question, omitting excuses, vagueness and/or excessive details. Please follow the following email template for reference.

Dear Dr Joshi (or Riju),

My name is (your name) and I am in your (Class Name).

(body)

Thank you,

Student name

Grading

Students are required to show all of the work. Full credit will only be given to properly written answers that are supported by step-by-step calculations. For Stata questions, students are required to *type their answers into a word processing document (provided separately).* Insert ONLY the relevant part of your Stata log file into your document, and *clearly explain how*

you use your Stata output answers the question. Copying and pasting your log file into the word document without an explanation will NOT be considered a complete answer and will not receive full credit. Students will also submit the log files for the Stata part of their homework. Please refer to the example Stata answer format file in Canvas. All grades are final and no grade negotiations will be entertained. No incomplete will be awarded.

Following is the policy for late submission for homeworks (excluding DRC exemptions):

10 percent deduction for every day that the homework is submitted late and the lowest possible grade is 40 percent. Submission after 7 days of the due date will not be accepted and 0 points will be given for that homework.

Affirmative Action

Portland State University supports equal opportunity for all, regardless of age, color, disability, marital status, national origin, race, religion or creed, sex or gender, sexual or gender identity, sexual orientation, veteran status, or any other basis in law.

Disability Resources at PSU

Students with accommodations approved through the Disability Resource Center are responsible for contacting the faculty member prior to, or during, the first week of term to discuss any accommodations. Students who believe they are eligible for accommodations but who have not yet obtained approval should contact the DRC immediately.

Academic Honesty

Academic honesty is expected and required of students enrolled in this course. Suspected academic dishonesty in this course will be handled according to the procedures set out in the Student Code of Conduct. This will include referring students to the Dean if it appears that students are using the work of others to gain credit in this class.

Course Materials

All course materials presented during this course (lectures, notes, homework assignments, answer keys, exams, etc.) are the copyrighted property of the course instructor and subject to the following conditions of use:

- Students may not record lectures/classroom activities or take any pictures/make reproductions of lecture slides unless prior written consent has been obtained by the instructor.
- Students may not share or post recordings or any other course materials online or distribute them in any way (including to students enrolled in the course and anyone not enrolled in the course).
- Any student violating these conditions may face academic disciplinary sanctions.