Course Syllabus

EC 469/549 : Introduction to Econometrics

Course Syllabus

(Tentative)

Winter 2025

Riju Joshi

```
Web
Office Hours: Monday to Thursdays: 1 pm - 3 pm
```

https://riju.youcanbook.me/

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.]
- Using R for Introductory Econometrics, by Florian Heiss. Available here:

https://www.urfie.net/downloads/PDF/URfIE_web.pdf

- ## Discord
  - Discord will be used for all communications! Please join us at https://discord.gg/HGrsWnjcuv
  - **PLEASE USE YOUR FULL NAME ON DISCORD SO THAT I CAN IDENTIFY YOU!**

R

- **R is mandatory for this course.** Almost every homework will have an R portion that would require students to use R to answer the questions. Students will also have to submit an R script associated with their homeworks which will contain the work that they have done in R. Please see the module on R for more information.

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, Feb 7 2025 - Sunday, Feb 9 2025** (details will be announced later.) : 35%
- Final Exam **Friday, March 14 2025 - Sunday, March 16 2025** (details will be announced later.) : 35%
- Writing/Reading assignment: (**March 20 2025**): 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 4-6 homeworks given during the course. Homeworks will contain multiple choice questions and students will be given two attempts. Homework questions will be provided in a pdf documents but students would need to mark their answer in Canvas.

Each homework will consist an R portion. The questions in the R portion of the homework will require students to do analysis in R to be able to answer and students are required to submit their work in R. The homework assignments are **crucial** for students to understand the course material better and prepare for exams. Team work is encouraged on homework assignments. Only partial credit will be given for late submissions.

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

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