Carleton University | Department of Economics

Winter 2025

ECON 4707 A Econometrics II

Course Outline

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Welcome to Econometrics II!

Prerequisite

The prerequisite for this course is ECON 4706 with a grade of C+ or higher, or STAT 3503 with a grade of C+ or higher, as outlined in the 2024-2025 Undergraduate Calendar. Students who believe that they have taken a similar background course or courses from another university must provide

appropriate documentation to the Department of Economics Undergraduate Administrator, Sean Hall seanhall3@cunet.carleton.ca

Introduction

An extension of ECON 4706. Topics include model specification, diagnostic checks, qualitative and limited dependent variables, panel data, and simultaneous equations models.

Learning Outcomes

By the end of this course, students will:

1) be conversant with and be able to define key econometric terminology beyond the scope of the classical normal linear regression model
2) understand the limitations of the classical normal linear regression model for applied econometric research
3) have been exposed to the idea of stochastic regressors and the basics of asymptotic theory
4) have studied a broad range of more advanced econometric models, including the simultaneous equations model, binary choice and limited dependent variable models, and the panel data model
5) have a clear understanding of the principles of estimation, including maximum likelihood estimation, and hypothesis-testing in statistical models
6) have gained further experience and confidence in the use of modern econometric software and in the interpretation and assessment of the relevant output
7) be increasingly familiar with the value and fundamentals of applied econometric research

Organization

This is an in-person course and is NOT suitable for online students. The class will meet once a week in at 8:35 a.m. on Tuesdays for a 2 hour and 50 minute lecture, with a short intermission.

There will be two (2) required assignments and an in-person final exam.

Please note that Brightspace and the Carleton email system will be used extensively as a means of communication with students. Therefore, students are strongly advised to access Brightspace and to check their Carleton email at regular intervals in order to check for new information. To access Brightspace and the Carleton email system, students require a MyCarletonOne account. For questions about MyCarletonOne accounts, students should access carleton.ca/its/get-started/ (and then click on either New Students or New Grad Students, as appropriate) or contact the ITS Service Desk.

Attendance

If you plan to succeed in this course, then I cannot overstress the critical importance of regular class attendance, together with the allocation of regular and consistent study time outside the classroom. Due to the nature of the course material, many students find that it is very difficult to catch up, should they fall behind.

Academic Integrity and Plagiarism

Please ensure that you are familiar with and comply with the Academic Integrity Policy

And, more specifically, with regard to the written work required for this course, please be sure to avoid any form of plagiarism:

The Academic Integrity Policy defines plagiarism as "*presenting, whether intentionally or not, the ideas, expression of ideas or work of others as one's own."* This includes reproducing or paraphrasing portions of someone else's published or unpublished material, regardless of the source, and presenting these as one's own without proper citation or reference to the original source. Examples of sources from which the ideas, expressions of ideas or works of others may be drawn include but are not limited to: books, articles, papers, literary compositions and phrases, performance compositions, chemical compounds, artworks, laboratory reports, research results, calculations and the results of calculations, diagrams, constructions, computer reports, computer code/software, material on the internet and/or conversations.

Examples of plagiarism include, but are not limited to:

- any submission prepared in whole or in part, by someone else, including the unauthorized use of generative AI tools (e.g., ChatGPT);
- using ideas or direct, verbatim quotations, paraphrased material, algorithms, formulae, scientific or mathematical concepts, or ideas without appropriate acknowledgment in any academic assignment;
- using another's data or research findings without appropriate acknowledgement;
- submitting a computer program developed in whole or in part by someone else, with or without modifications, as one's own; and
- failing to acknowledge sources through the use of proper citations when using another's work and/or failing to use quotation marks.

Plagiarism is a serious offence that cannot be resolved directly by the course's instructor. The Associate Dean of the Faculty conducts a rigorous investigation, including an interview with the student, when an instructor suspects a piece of work has been plagiarized. Penalties are not trivial. They can include a final grade of "F" for the course.

Assignments

Assignments will be posted on Brightspace and will be submitted through Brightspace according to the following schedule:

	Posted	Due
Assignment 1	February 11	March 4
Assignment 2	March 18	April 1

Final Exam

The final exam will be in-person and comprehensive, and it will be scheduled by Examination Services during the regular final examination period (April 11-26). Note that students should not make travel plans during this final examination period as this would not be a valid reason for missing a final exam.

Evaluation

The final % grade for this course will be calculated as follows:

Assignments	40% (2 assignments, equally weighted)
Final Examination	60%

This % grade will then be converted into the alphabetical grade system using the standard equivalences, as outlined in Section 5.4 of the Academic Regulations of the University in the 2024-2025 Undergraduate Calendar.

In the event that one or more components of the term work are not completed, the weight of the incomplete component(s) will not be transferred to the final examination without a documented and compelling reason.

If you require academic consideration for one or more components of the term work, then you should contact the instructor as soon as possible. The instructor may then require you to complete the appropriate Academic Consideration for Coursework Form, as per the Academic Consideration Policy

Students who do not write the final examination because of illness or other circumstances beyond their control may apply to write a deferred final examination. In order to write a deferred final examination, students must contact the Registrar's Office. (For further details, see Section 4.3 of the Academic Regulations of the University in the 2024-2025 Undergraduate Calendar.) In the event that a student writes a deferred examination, the deferred examination will carry the same weight as the final examination in determining the course grade. Needless to say, any deferred examination will not be identical to the original final examination.

Finally, please note that: "Standing in a course is determined by the course instructor subject to the approval of the Faculty Dean. This means that grades submitted by an instructor may be subject to revision. No grades are final until they have been approved by the Dean."

Required Textbook

The required textbook for this course is:

Dougherty, C. (2016), Introduction to Econometrics (5th Edition). Oxford: Oxford University Press. ISBN-10: 0199676828, ISBN-13: 9780199676828 (paperback)

This textbook can be obtained through the Carleton University bookstore
https://www.bkstr.com/carletonstore/shop/textbooks-and-course-materials

or elsewhere.

An additional textbook that students may find useful is:

Kennedy, P. (2008), A Guide to Econometrics (6th Edition). Malden, MA: Blackwell Publishing. ISBN 978-1-4051-8257-7, (paperback)

The Kennedy book is really a "companion" to the study of econometrics rather than an econometrics textbook *per se*. It provides alternative and/or complementary discussions of all the topics treated in the course as well as a bridge to the econometrics literature. It would be particularly useful for students intending to continue on to graduate study in economics.

Computer Package

The use of the STATA software package will be an integral part of this course. Personal copies of STATA will be available for download under Carleton's STATA site-licence. Details will be provided in due course. STATA can also be accessed through the Carleton student computer networks.

Course Content

1. Introduction and Statistical Review, Dougherty – Introduction and Review.
2. Stochastic Regressors and Measurement Errors, Dougherty – Ch. 8.
3. Simultaneous Equations Estimation, Dougherty – Ch. 9 and Section 11.6.
4. Binary Choice and Limited Dependent Variable Models, Dougherty – Sections 10.1-10.5.
5. Maximum Likelihood Estimation, Dougherty – Section 10.6.
6. Panel Data Models, Dougherty – Ch. 14.

Mental Health Resources and Academic Accommodations

Please note that you are responsible for reading and being aware of the information relating to Carleton University and other resources for mental health and academic support, as well as academic accommodations, found HERE

IF YOU HAVE PROBLEMS WITH THIS COURSE, PLEASE LET ME KNOW!

IF I DON'T KNOW THAT YOU HAVE PROBLEMS, I CAN'T FIX THEM!