

Carleton University – Department of Economics

ECON 5027–Econometrics I

Academic year: 2025-2026

Winter 2026

The Instructor

Instructor: Clément Yélou, Contract instructor

Email Address: clement.yelou@carleton.ca

Office Hours Location (in person): Loeb building Room B840

Office Hours: Tuesday 6:00 pm - 7:30 pm EST or by appointment

Office Hours Zoom Link (Virtual Attendance): [Zoom Link for Office Hours](#)

The Course

Course Location: [Log into [Carleton Central](#) to view the class location on your personal timetable.]

Course Day and Time : Thursday 6:05 pm - 8:55 pm EST

Brightspace Course Page: [ECON 5027 Econometrics I Winter 2026 Brightspace](#).

Course lectures :

- **Course delivery mode:** This course is offered *in person* only.
- **Attendance:** In-person attendance at all lectures is **mandatory**.
- **Recordings:** No lecture recordings will be provided.
- **Student recordings:** Recording the course by students is **not permitted at any time**.

Teaching Assistant (TA): Brendan Bray

TA Email Address: BrendanBray@cmail.carleton.ca

TA Office Location: Loeb building Room B848

TA Office Hours: Thursday 4:00 pm - 5:00 pm EST

Tutorial Location: Southam Hall Room 520

Tutorial Day and Time : Thursday 1:05 pm - 2:25 pm EST

Course Description and Learning Outcomes

The goal of this course is to provide students with the technical background required to responsibly use a variety of common econometric methods. The focus of the course is primarily theoretical, although students will apply the material learned in class to analyze data and conduct simulation studies in the assignments. The course will cover both linear and non-linear models. Introductory concepts related to simple and multiple regression models are assumed to be known; however, it is not assumed that these concepts are known in a matrix algebra context. The course will introduce fundamentals of econometric theory underlying ordinary least squares before studying instrumental variables estimation method and maximum likelihood estimation method with illustrations with discrete choice models.

Course Preclusions: Precludes additional credit for ECON 5005 (no longer offered).

Course Prerequisites: None (MA status).

Programming Requirements

Students will be required to use R for the assignments. Programming in R will be taught in tutorials. R is open-source and freely available. Students may also find it useful to install Rstudio. Instructions on how to install R and RStudio will be posted on the course website before the first tutorial session. These programs should be installed before the first tutorial.

Tutorials

Tutorials will be given by the teaching assistant, starting [January 22, 2026](#). The first tutorials will provide an introduction to programming using R, which will be used substantially throughout the course. After introducing the basics of programming in R, the tutorials will use R to explore simulation experiments in econometrics with applications to estimator's properties taught in class.

Textbooks and Readings

Students are not required to purchase a textbook for this course. We will use a variety of references. Our main reference text is:

- (W) Wooldridge, J. M. (2010). *Econometric Analysis of Cross Section and Panel Data*. MIT Press.

The following additional resources may be helpful throughout the course:

- Angrist, J. D. and Pischke, J. (2008). *Mostly Harmless Econometrics: An Empiricist's Companion*. Princeton University Press.
- Anton, H., and Rorres, C. (2013). *Elementary linear algebra: applications version*. John Wiley & Sons.
- Cameron, A. C. and Trivedi P. K. (2005). *Microeconometrics: Methods and Applications*. Cambridge University Press.
- Train, K. (2009). *Discrete Choice Methods with Simulation*. Cambridge University Press.
- White (1984). *Asymptotic Theory for Econometricians*. Academic Press.

Course Calendar

The tentative course outline is displayed in Table 1. Depending on the pace of the lectures, this course outline may be subject to modification. Any changes will be discussed in advance in class.

Topic #	Lecture Dates	Topic	Readings
1	January 8 January 15	Introduction, Math Review, Linear Models	(W): Ch. 3.
2	January 22 January 29 February 5 February 12	Properties of OLS	(W): Ch. 4.
—	February 16 - February 20	Winter Break: no classes	
—	February 26	Midterm Exam	
3	March 5 March 12	Misspecification and IV Methods	(W): Ch. 4.
4	March 19 March 26 April 2	Maximum Likelihood and Discrete Choice Models	(W): Ch. 13, 15.

Table 1: A tentative course outline for ECON 5027.

Evaluation, Grading Scheme and Exam Policies

- Assignment I — 15%. To be posted on the course website on [January 22, 2026](#). Due on [February 12, 2026](#), at 11:59 pm EST. To be submitted via the course's Brightspace page.
- Midterm — 30%. The midterm will take place in class on [February 26, 2026](#).
- Assignment II — 15%. To be posted on the course website on [March 12, 2026](#). Due on [April 2, 2026](#), at 11:59 pm EST. To be submitted via the course's Brightspace page.
- Final Exam— 40%. The final exam will be administered during the exam period, sometime between [April 11 - 23, 2026](#). The final exam will be scheduled later in the term and more details will be released at that time.

Assignments

Students will submit assignment work individually. They may collaborate with each other while working on the assignment questions for learning purposes; however each student will have to prepare and submit his own assignment work.

Assignments will require students to apply programming skills learned in tutorials to a mix of theoretical and applied questions.

All assignments will be submitted via the course Brightspace page. Students will submit both a written portion of the assignment (containing any mathematical derivations or explanations required to answer the assignment questions), as well as meticulously labelled R code used to answer any of the programming-based questions.

Assignment marks may be deducted if any supporting code is not clearly labelled and/or explained.

Late assignments will be penalized 1 mark for each block of 5 minutes they are late (e.g. 23 minutes late means a 5 mark deduction from your total assignment score).

Midterm Exam and Policies

The midterm will be administered in class on [February 26, 2026](#), and will cover lecture material up to and including the lecture on [February 12, 2026](#).

If you are absent for a midterm, email me as soon as possible to reschedule. I reserve the right to request a [Academic Consideration Coursework Form](#) or [PMC Letter of Accommodation](#) depending on the length of incapacitation.

Final Exam and Policies

The final exam will be administered during the final exam period from [April 11 - 23, 2026](#). The final exam will cover lecture material up to and including the final lecture on [April 2, 2026](#).

The final exam will be in person. It will be scheduled later in the term, and relevant details for the final exam, including the location, will be announced at that time.

Students are not to make travel plans during the exam period as that is not a valid reason for missing a final exam.

For those unable to complete the final exam in the scheduled time, documentation is required, e.g. doctor's note or police report. The documentation provided by students for missed or incomplete final exams will be subject to verification by the instructor. Submitting a forged note will be regarded as a serious academic offense. Students who miss the final exam and fail to provide sufficient documentation will receive a score of zero.

Deferred Final

Students who do not write the final examination because of illness or other circumstances beyond their control may apply for to write a deferred final examination by contacting the Registrar's Office no later than three working days after the original final examination was scheduled.

Any deferred examination will be in person, and relevant details for the deferred examination, including the location, will be communicated in due time to the student(s) writing the exam.

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.

E-Proctoring

E-proctoring will not be used for evaluations in this course.

Satisfactory Performance Criteria

Students must fulfill all of the course requirements, including the final exam, in order to achieve a passing grade (D- or higher).

Course Standing

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

Important Dates and Communication

Important Dates

Table 2 displays a list of important dates. The evaluation dates below are subject to change.

Dates	Event
January 11	First Class
January 14	First Tutorial
January 22	Assignment I Posted
February 12	Assignment I Due at 11:59 pm EST
February 16 - 20	Winter Break, no classes.
February 26	Midterm (in class)
March 12	Assignment II Posted
April 2	Assignment II Due at 11:59 pm EST
April 2	Last Class
April 11 - 23	Final Exam Period

Table 2: Important dates for ECON 5027.

Email Communication

Communication outside of class, tutorials and office hours will be done through email. **For security purposes, please communicate only using your carleton.ca email address.** Please include the course name “ECON 5027” in the subject line of your email.

You can expect to receive a response to your email within 48 hours. However, communication outside of class hours should occur only in exceptional cases; while email is not the appropriate medium to ask questions about course material, students are allowed to use it. Students who request clarification on course material through email will either receive an answer or be directed to ask their question during class, tutorial or office hours, depending on the nature of the question.

Important instructions, regulations and academic support

The following are important: (i) instructions for any submitted material for this course including assignments, in-class exams and take home exams, and (ii) references to official information about plagiarism, Carleton University resources, and academic accommodations. Students who

need clarifications about the information below are invited to raise the question either by Email or directly during an office hours session.

1. **Generative Artificial Intelligence (AI):** On the use of Generative Artificial Intelligence tools (e.g. ChatGPT), while you may consult available resources (electronic or not), any *textual and direct* use of generative AI tools to produce any document you submit for this course is considered a violation of academic integrity standards as per the [university's statement on Plagiarism](#). By *textual and direct*, the usual [standards on plagiarism](#) apply. Students are responsible to access resources related to citing Generative AI on the [MacOdrum Library website](#). Also, as our understanding of the uses of AI and its relationship to student work and academic integrity continue to evolve, students are required to discuss their use of AI in any circumstance not described here with the course instructor to ensure it supports the learning goals for the course.
2. **Intellectual Property Copyright:** Student or instructor materials created for this course—including presentations and posted notes, assignments and exams—remain the intellectual property of their author(s). The materials' author(s) are the exclusive owner(s) of the copyright and intellectual property of all course materials. They are provided for personal use only. You may take notes and make copies of course materials for your own educational use. You may not reproduce or redistribute any course materials without prior written consent from the author(s).
3. **Re-use of (own) work:** (i) previously submitted for credit in another course, (ii) conducted for any previous purpose such as a masters paper or thesis, or (iii) is currently performed and intended for another course or for other purposes (*e.g.* current research, material submitted for work outside the university), is **not** considered plagiarism.¹ But you are required to cite such work and seek the instructor's permission **before** using it with proper citation. If the work is current and is intended for another course, the permission of the professor in charge of the other course will be required in writing (by official university Email); this also applies to courses taken at the university of Ottawa.
4. **The Academic Integrity and Plagiarism at Carleton University:** You are responsible for reading and knowing the information about The Academic Integrity Policy of Carleton University found at <https://carleton.ca/registrar/academic-integrity/>.

The University 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 from include but

¹If the work was submitted for work outside the university, it is the responsibility **of the student** to ensure confidentiality rights are respected.

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.

Please be aware that plagiarism is serious offence at Carleton University and should be recognized and avoided. *Plagiarism is a serious offence that cannot be resolved directly by the course's instructor.* The Associate Dean of the Faculty follows a rigorous process for academic integrity allegations, including reviewing documents and interviewing the student, when an instructor suspects a violation has been committed. *Penalties for violations are not trivial and may include a final grade of "F" for the course.*

5. **Student Mental Health:** As a student you may experience a range of mental health challenges that significantly impact your academic success and overall well-being. If you need help, please speak to someone. There are numerous resources available both on- and off-campus to support you. For more information, please visit <https://wellness.carleton.ca/> for access to a range of available resources and services.
6. **Requests for Academic Accommodation:** Carleton is committed to providing academic accessibility for all individuals. You may need special arrangements to meet your academic obligations during the term. The accommodation request processes, including information about the Academic Consideration Policy for Students in Medical and Other Extenuating Circumstances, are outlined on the Academic Accommodations website (<https://students.carleton.ca/course-outline/>).
7. **Policy on Classroom Recording:** Unauthorized student recording of classroom or other academic activities (including advising sessions or office hours) is prohibited. Unauthorized recording is unethical and may also be a violation of University policy. Students requesting the use of assistive technology as an accommodation should contact the [Paul Menton Centre](#). Unauthorized use of classroom recordings – including distributing or posting them – is also prohibited. Under the University's [Copyright Policy](#), faculty own the copyright to instructional materials – including those resources created specifically for the purposes of instruction, such as lectures slides, lecture notes, and presentations. Students cannot copy, reproduce, display, or distribute these materials or otherwise circulate these materials without the instructor's written permission. Students who engage in unauthorized recording, unauthorized use of a recording, or unauthorized distribution of instructional materials will be referred to the appropriate University office for follow-up.