

Department of Economics, Carleton University
ECON 5027 F – Econometrics I
Fall 2026

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Course delivery: In person (attendance is mandatory)

Course Brightspace page: <https://brightspace.carleton.ca/d2l/home/449413>

Algonquin Territory Acknowledgment

Carleton University acknowledges the location of its campus on the traditional, unceded territories of the Algonquin nation. In doing so, Carleton acknowledges it has a responsibility to the Algonquin people and a responsibility to adhere to Algonquin cultural protocols.

Email policy

Students can expect a reply within two to three business days. To receive a timely reply, students should use their Carleton email address and include ECON 5027 as the first part of the subject of all emails. For additional information on email etiquette, [click here](#).

Course copyright

Classroom teaching and learning activities, including lectures, discussions, presentations, etc., by both instructors and students, are copyright protected and remain the intellectual property of their respective author(s). All course materials, including PowerPoint presentations, outlines, and other materials, are also protected by copyright and remain the intellectual property of their respective author(s). Students registered in the course may take notes and make copies of course materials for their own educational use only. Students are not permitted to reproduce or distribute lecture notes and course materials publicly for commercial or non-commercial purposes without express written consent from the copyright holder(s).

Course description

An introduction to econometrics at the graduate level. The course will study linear regression using matrix algebra, introduce students to the numerical and statistical properties of the ordinary least squares estimator, provide a rigorous treatment of hypothesis testing and confidence intervals, and explore related topics.

Learning outcomes

- Understand the theory behind common econometric methods.
- Critically evaluate whether and how these methods can be used in various economic contexts.
- Prepare students to conduct their own analyses and interpret others' findings.

Prerequisites and preclusions

Course prerequisites: None (MA standing).

Course preclusions: None.

Textbook

The course will use the following textbook, which can be accessed for free here.

- Russell Davidson and James G. MacKinnon, *Econometric Theory and Methods*, New York, Oxford University Press, 2004.

Statistical software

All empirical work discussed in class will be done using Stata. However, students may complete empirical exercises using the software of their choice. Carleton students can download Stata here (no cost).

Course evaluation

The course will be graded as follows:

Evaluation	Grade %	Date	Delivery
Participation	10	Weekly	In-person
Quizzes	30	Weekly, except Sep. 11 and Oct. 23	In-person
Midterm exam	30	Oct. 23	In-person
Final exam	30	Dec. 12-23	In-person

Participation: Students are expected to participate to class discussions, either by asking questions or by contributing answers to the instructor's or the other students' questions. Students will not be evaluated on the accuracy of their answers, but on whether they are meaningfully trying to engage with the course material. There are 11 lectures throughout the semester. For every lecture for which participation is adequate, students will obtain one participation mark; otherwise, their participation mark will be zero for that class. The participation grade will be determined by taking the eight best classes. For example, if a student participates in seven classes, they will obtain an overall participation grade of $7 \div 8 \times 10 = 8.75$.

Quizzes: There will be 10 quizzes throughout the term, held at the beginning of each tutorial and to be answered individually by each student. Each quiz will cover material seen in the previous class. For example, the first quiz will take place on Sep. 18 and cover material seen in class on Sep. 11. Only the seven best quizzes will be used to calculate a student's final grade. There will be no make-up quizzes if a student misses more than three quizzes.

Unmarked assignments: Each week, students will be given a list of theoretical and empirical exercises they are strongly recommended to work through in order to consolidate their understanding of the material covered in class. These will not be marked and will not count toward their final grade. However, the exercises are chosen to prepare them for the quizzes and, ultimately, for the midterm and final exams. Answer keys for these assignments will not be distributed, but students are encouraged to work on them with their peers and to consult with the TA or instructor if they need help.

Midterm exam: The midterm exam will be held in class, based on material covered in classes 1 through 6 (see Tentative course calendar). There will be no make-up exam if a student misses the midterm. If a student is unable to complete the midterm, the weight of the midterm will be shifted to the final exam, resulting in a final exam worth 60%.

Final exam: The final exam will be held in person during the university's final examination period, based on all the material covered during the semester (cumulative exam).

In cases of serious illness/emergency or other circumstances that cause students to miss the final exam, students may petition the Registrar's Office to write a deferred exam. Students must make this petition no later than three working days after the original final examination. In the interim, they will receive a grade of zero for the final examination. If granted by the Registrar's Office, the deferred exam will take place during the time designated in Carleton University's calendar and carry the same weight as the final examination in determining the course grade.

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

Final grade approval: 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.

Documentation for missed evaluations: The instructor reserves the right to request a Self-Declaration form or PMC letter of accommodation depending on the length of incapacitation. This information should be communicated ahead of the scheduled evaluation if possible, or as soon as possible following the missed evaluation.

Use of generative artificial intelligence (GenAI) tools

- Students may choose to use GenAI to complete some or all of the unmarked assignments.
- In deciding whether and how to use GenAI in the course, students should consider two factors:
 1. Assignments are designed to help students consolidate their learning throughout the course. Students will be evaluated on this learning through quizzes and exams, for which use of GenAI will not be permitted. Students who disproportionately rely on GenAI for the unmarked assignments will likely find they are ill-prepared for the marked evaluations.
 2. GenAI can be a powerful and useful tool. As a rule of thumb, it is a good idea for students to use GenAI to (1) do something they already know how to do, much quicker than they can do it, or (2) teach themselves how to do something. Conversely, it is not a good idea for students to use GenAI to do for them something they do not know how to do.
- Students interested in learning more about GenAI use for academic work can start [here](#).
- Students who choose to use GenAI to complete coursework must cite sources appropriately. For guidance on how to do so, see [here](#).
- Students assume all responsibility for the answers they submit.
- 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.

Re-marking

Any request for re-marking must be submitted in writing within seven days from when the grade was made available. Students should include in that request a detailed explanation of why they feel they should receive a higher mark. Re-marking will apply to the entire quiz/exam, not just

the contentious part(s). As a result, the revised mark may be higher than, lower than, or the same as the original mark.

Satisfactory performance criteria

Students must write the final exam and achieve a minimum of 50% on the participation and quizzes portions of the course in order to achieve a passing grade (D- or higher).

Tentative course calendar

The schedule below is tentative and may be adapted during the semester.

Class	Date	Topic	Reading
1	Sep. 11	Regression models	Ch. 1
2	Sep. 18	Regression models The geometry of linear regressions	Ch. 1 Ch. 2
3	Sep. 25	The geometry of linear regressions	Ch. 2
4	Oct. 2	The statistical properties of OLS	Ch. 3
5	Oct. 9	The statistical properties of OLS Hypothesis testing in linear regression models	Ch. 3 Ch. 4
6	Oct. 16	Hypothesis testing in linear regression models	Ch. 4
7	Oct. 23	Midterm exam	
8	Nov. 6	Confidence intervals	Ch. 5
9	Nov. 13	Confidence intervals	Ch. 5
10	Nov. 20	Models with autoregressive errors	Ch. 6-7
11	Nov. 27	Instrumental variables estimation	Ch. 8
12	Dec. 4	Instrumental variables estimation	Ch. 8

Note: Not every chapter will be covered in its entirety. Students should refer to Brightspace for the detailed list of covered chapter sections.

Centre for Indigenous Support and Community Engagement (CISCE)

The Centre for Indigenous Support and Community Engagement (CISCE), formerly known as the Centre for Indigenous Initiatives, supports First Nations (status and non-status), Inuit, and Métis students, staff, and faculty by providing culturally safe spaces for dialogue and learning. The Centre provides weekly, monthly and annual programming for students and also develops and delivers resources and training to educate the Carleton community about Indigenous histories, worldviews and perspectives. To learn more about the services offered, please visit <https://carleton.ca/indigenous/cisce/students/>. If you have any questions, you can email Indigenous@carleton.ca.

Academic integrity

Group or collaborative work: Students are encouraged to work together for the unmarked assignments. However, marked evaluations must all be completed individually by each student.

Plagiarism: 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 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.

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 consult <https://wellness.carleton.ca/>.

Emergency Resources (on and off campus)

- Crisis/Urgent Counselling Support: 613-520-6674 (Mon-Fri, 8:30-4:30)
- Suicide Crisis Helpline: call or text 9-8-8, 24 hours a day, 7 days a week.
- For immediate danger or urgent medical support: call 9-1-1

Carleton Resources

- Mental Health and Wellbeing: <https://carleton.ca/wellness/>
- Health & Counselling Services: <https://carleton.ca/health/>
- Paul Menton Centre: <https://carleton.ca/pmc/>
- Academic Advising Centre (AAC): <https://carleton.ca/academicadvising/>
- Centre for Student Academic Support (CSAS): <https://carleton.ca/csas/>
- Equity & Inclusivity Communities: <https://carleton.ca/equity/>

Off Campus Resources

- Distress Centre of Ottawa and Region: call 613-238-3311, text 343-306-5550, or connect online at <https://www.dcottawa.on.ca/>
- Mental Health Crisis Service: call 613-722-6914 or toll-free 1-866-996-0991, or connect online at <http://www.crisisline.ca/>
- Good2Talk: call 1-866-925-5454 or connect online at <https://good2talk.ca/>
- The Walk-In Counselling Clinic: for online or on-site service <https://walkincounselling.com>

Requests for academic accommodations

Carleton is committed to providing academic accessibility for all individuals. Students may need special arrangements to meet their 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/>).

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.