

Economics 715 (L01) (Advanced Econometrics II)

Instructor: Leonard Goff
Email: leonard.goff@ucalgary.ca

Lecture Location: SS 423
Lecture Days/Time: Tues/Thurs 09:30 - 10:45

Office: SS 408 (Zoom office hours possible by request)
Office Hours: 1-3pm Tuesdays

Winter 2023

Course Description:

This is the second course in the PhD sequence in econometrics. The course will focus on identification, estimation of and inference about treatment effects.

Course Learning Outcomes:

This course will focus on the main research designs for learning about causal effects used in applied research. By the end of the course students should be able to formulate credible identification, estimation and inferential strategies to be applied to economically interesting causal questions.

Course Outline:

Section 1: Review of probability, expectation and conditional expectation. Review of OLS and its statistical properties.

Section 2: Causality and the potential outcomes framework. Identification, selection bias, and randomized experiments. Linear regression as a method to conduct inference about causal effects.

Section 3: Instrumental variables methods, including the LATE framework for heterogeneous treatment effects, classical homogenous effect estimators, quantile treatment effects and the distribution of treatment effects.

Section 4: Discontinuity-based methods: regression discontinuity designs, regression kink designs, and identification using bunching.

Section 5: Difference in differences and dynamic treatment effects. This section will review recent literature that extends the canonical two-way-fixed-effects estimator to allow for treatment effect heterogeneity.

Prerequisites/corequisites:

Economics 705.

Required Textbook(s):

Angrist, J.D. and Pischke, J., *Mostly Harmless Econometrics: An Empiricist's Companion*. Princeton University Press.

Hansen, B., *Econometrics*, Princeton University Press. Until recently this book was available online for free, but is now sold by Princeton University Press.

Recommended Textbook(s):

Students may also find the free online textbook Cunningham, S.: *Causal Inference: The Mixtape* useful: <https://mixtape.scunning.com/>

If you'd like a review of undergraduate econometrics, you might consider consulting Wooldridge, J.M., *Introductory Econometrics: A Modern Approach*, South-Western.

Grade Determination:

MIDTERM EXAM	30%
Assignments	30%
Referee report	10%
FINAL EXAM	<u>30%</u>
	100%

Lowest assignment grade will be dropped and the average among the others will count towards final grade.

Examination Details:

Tests and exams will not involve multiple choice questions, but may questions that ask students to assess whether a statement is true/false.

Programmable calculators and a formula sheet will be allowed during the writing of tests or final examinations. Students are reminded that simply being able to access their cellphone during an exam is academic misconduct.

The exact date for the in-class midterm will be announced at least one week in advance.

Notes:

1. Students are responsible for all assigned material, e.g., supplementary material posted on D2L, regardless of whether or not the material was covered in class.

IMPORTANT POLICIES AND INFORMATION**Absence From a Mid-term Examination**

Students who are absent from a scheduled term test or quiz for legitimate reasons are responsible for contacting the instructor via email within 48 hours of the missed test to discuss alternative arrangements. A copy of this email may be requested as proof of the attempt to contact the instructor. Any student who fails to do so forfeits the right to a makeup test.

Deferred Term Work Form: Deferral of term work past the end of a term requires a form to be filled out by the student and submitted, along with any supporting documentation, to the instructor. The form is available at:

<https://live-ucalgary.ucalgary.ca/sites/default/files/teams/14/deferral-of-term-work-2020.pdf>

Once an extension date has been agreed between instructor and student, the instructor will email the form to the Faculty of Arts Program Information Centre (ascarts@ucalgary.ca) for approval by the Associate Dean.

Deferral of a Final Examination

Deferral of a final examination can be granted for reasons of illness, domestic affliction, and unforeseen circumstances, as well as to those with three (3) final exams scheduled within a 24-hour period. Deferred final exams will not be granted to those who sit the exam, who have made travel arrangements that conflict with their exam, or who have misread the examination timetable. The decision to allow a deferred final exam rests not with the instructor but with Enrolment Services. Instructors should, however, be notified if you will be absent during the examination. The Application for Deferred Final Exam, deadlines, requirements and submission instructions can be found on the Enrolment Services website at <https://www.ucalgary.ca/registrar/exams/deferred-exams>.

Reappraisal of Grades:

For Reappraisal of Graded Term Work, see Calendar I.2

<http://www.ucalgary.ca/pubs/calendar/current/i-2.html>

For Reappraisal of Final Grade, see Calendar I.3

<http://www.ucalgary.ca/pubs/calendar/current/i-3.html>

Academic Misconduct:

Academic Misconduct refers to student behavior that compromises proper assessment of students' academic activities and includes: cheating; fabrication; falsification; plagiarism; unauthorized assistance; failure to comply with an instructor's expectations regarding conduct required of students completing academic assessments in their courses; and failure to comply with exam regulations applied by the Registrar.

Student committing academic misconduct during the final exam will not receive a passing grade for the course.

For information on the Student Academic Misconduct Policy, Procedure and Academic Integrity, please visit: <https://www.ucalgary.ca/pubs/calendar/current/k-3.html>

Plagiarism And Other Forms Of Academic Misconduct

Academic misconduct in any form (e.g. cheating, plagiarism) is a serious academic offence that can lead to disciplinary probation, suspension or expulsion from the University. Students are expected to be familiar with the standards surrounding academic honesty; these can be found in the University of Calgary calendar at <http://www.ucalgary.ca/pubs/calendar/current/k.html>. Such offences will be taken seriously and reported immediately, as required by Faculty of Arts policy.

Recording of Lectures:

Recording of lectures is prohibited, except for audio recordings authorized as an accommodation by SAS or an audio recording for individual private study and only with the written permission of the instructor. Any unauthorized electronic or mechanical recording of lectures, their transcription, copying, or distribution, constitutes academic misconduct. See <https://www.ucalgary.ca/pubs/calendar/current/e-6.html>.

Academic Accommodations:

Students seeking an accommodation based on disability or medical concerns should contact Student Accessibility Services. SAS will process the request and issue letters of accommodation to instructors. Students who require an accommodation in relation to their coursework based on a protected ground other than disability should communicate this need in writing to their instructor. The full policy on Student Accommodations is available at

<https://www.ucalgary.ca/legal-services/university-policies-procedures/accommodation-students-disabilities-procedure>

Research Ethics

Students are advised that any research with human subjects – including any interviewing (even with friends and family), opinion polling, or unobtrusive observation – must have the approval of the Conjoint Faculties Research Ethics Board. In completing course requirements, students must not undertake any human subject research without discussing their plans with the instructor, to determine if ethics approval is required.

Instructor Intellectual Property

Course materials created by instructors (including presentations and posted notes, labs, case studies, assignments and exams) remain the intellectual property of the instructor. These materials may NOT be reproduced, redistributed or copied without the explicit consent of the instructor. The posting of course materials to third party websites such as note-sharing sites without permission is prohibited. Sharing of extracts of these course materials with other students enrolled in the course at the same time may be allowed under fair dealing.

Freedom of Information and Protection of Privacy (FOIP) Act:

Personal information is collected in accordance with FOIP. Assignments can only be returned to the student and will be accessible only to authorized faculty and staff. For more information, see <https://www.ucalgary.ca/legal-services/access-information-privacy>

Copyright Legislation:

See the University of Calgary policy on Acceptable Use of Material Protected by Copyright at <https://www.ucalgary.ca/legal-services/university-policies-procedures/acceptable-use-material-protected-copyright-policy> Students who use material protected by copyright in violation of this policy may be disciplined under the Non-Academic Misconduct Policy.

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Evacuation Assembly Points

In the event of an emergency evacuation from class, students are required to gather in designated assembly points. Please check the list found at <https://www.ucalgary.ca/risk/emergency-management/evac-drills-assembly-points/assembly-points> and note the assembly point nearest to your classroom.

Important Dates:

Please check: <http://www.ucalgary.ca/pubs/calendar/current/academic-schedule.html>.

Faculty of Arts Program Advising and Student Information Resources

- Have a question, but not sure where to start? The Arts Students' Centre is your information resource for everything in Arts! Drop in at SS102, call them at 403-220-3580, or email them at artsads@ucalgary.ca. You can also visit the Faculty of Arts website at <http://arts.ucalgary.ca/undergraduate>, which has detailed information on common academic concerns, including program planning and advice.
- For registration (add/drop/swap), paying fees and assistance with your Student Centre, contact Enrolment Services at 403-210-ROCK [7625] or visit them in the MacKimmie Tower.

Important Contact Information

Campus Security and Safewalk (24 hours a day/7 days a week/365 days a year)
Phone: 403-220-5333

Faculty of Arts Undergraduate Students' Union Representatives
Phone: 403-220-6551
Email: arts1@su.ucalgary.ca, arts2@su.ucalgary.ca, arts3@su.ucalgary.ca,
arts4@su.ucalgary.ca
Students' Union URL: www.su.ucalgary.ca

Graduate Students' Association
Phone: 403-220-5997
Email: askgsa@ucalgary.ca
URL: www.ucalgary.ca/gsa

Student Ombudsman
Phone: 403-220-6420
Email: ombuds@ucalgary.ca

Campus Mental Health Resources

The University of Calgary recognizes the pivotal role that student mental health plays in physical health, social connectedness and academic success, and aspires to create a caring and supportive campus community where individuals can freely talk about mental health and receive supports when needed. We encourage you to explore the excellent mental health resources available throughout the university community, such as counselling, self-help resources, peer support or skills-building available through the following resources:

SU Wellness Centre: <http://www.ucalgary.ca/wellnesscentre/>

Student Wellness Services:

<https://www.ucalgary.ca/wellness-services/services/mental-health-services>

Campus Mental Health Strategy website: <https://www.ucalgary.ca/mentalhealth/>.

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2022-12-08