

## Economics 495(L01) (Econometrics I)

Instructor: Professor Daniel Gordon

Lecture Location: MS 217

Lecture Days/Time: T/R 9:30:10:45

Email: dgordon@ucalgary.ca

Office: SS 326

Office Hours: T/R 13:00-14:00

(Winter 2019)

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### Course Description:

Econometrics combines economic theory, statistics and mathematics in the study of economic data. This course will focus on the theory and application of the multi-variate linear regression model. The least squares estimator will be the principal tool for estimation but the maximum likelihood estimator is introduced. The course will emphasize the fundamentals of regression models and deal with model specification, identification, estimation and hypothesis testing. Econ 495 starts at a level that assumes familiarity with the material covered in Econ 395, and a good understanding of Expectation theory and some calculus. The use of a standard econometric software package (Stata) is emphasized.

**Course Objectives/Learning Outcomes:** The primary objective of the course is to provide students with a solid theoretical and practical foundation for the interpretation of empirical evidence in economics. The course will emphasize the fundamentals of regression models and deal with model specification, identification, estimation and hypothesis testing. Students will be introduced to cross-sectional, panel data, and time series models.

### Course Outline: (all chapters from Wooldridge)

Review of least squares regression. You are expected to have a good understanding of Chapters, 3, 4, 6, 7, 8 and 9 in Wooldridge.

Least squares Asymptotics (Chapter 5)

What happens to the theoretical properties of least squares estimates when the sample size increases.

Time series econometrics (Chapters 10 & 11)

Fundamental characteristics and problems in time series econometrics.

Further issues in time series econometrics (Chapter 12 & 18)

Serial correlation. Heteroskedasticity, Unit Roots, and Error Correction modelling.

Introduction to panel data (Chapter 13)

Combining independent cross sections, following cross section observations over time, first differencing and policy analysis.

Panel data further issues (Chapter 14)

Fixed effects, random effects, and dummy variable estimation.

**Instrumental variables (Chapter 15)**

The importance of instrumental variables in correcting endogenous RHS variables.

**Limited dependent variable models (Chapter 17)**

Maximum likelihood estimation, logit and probit models, censored distribution and truncated regression analysis.

**Empirical Project (Chapter 19)**

Practical issues in defining an econometric problem and carrying out an empirical project.

**Prerequisites/corequisites:** Economics 301 and 303 and 395; and Mathematics 249 or 251 or 265 or 281.

**Required Textbook(s):** Wooldridge, Jeffrey M., *Introductory Econometrics: A Modern Approach*, 6<sup>th</sup> Edition, Cengage.

**Books on Reserve:**

Angrist, J.D. & Pischke, J.,	Mostly Harmless Econometrics: An Empiricist's Companion
Wooldridge, J.M.	Introductory Econometrics: A Modern Approach
Verbeek, M.	A Guide to Modern Econometrics
Kleiber, C. & Zeileis, A.	Applied Econometrics with R
Studenmund, A.H.	Using econometrics: a practical guide
Kennedy, P.	A guide to econometrics
Gujarati D. & Porter D.	Basic Econometrics
Buse, A.	U-statistics, Mm-estimators and resampling
Pearl, J,	Causality: models reasoning and inference
Angrist, J.D. & Pischke, J.,	Mastering metrics

**Desire2Learn:**

This course will make use of the Desire2Learn (D2L) platform. Students who are registered in the course can log on at <http://d2l.ucalgary.ca> through their student centre. Please note that D2L features a class e-mail list that may be used to distribute course-related information. These e-mails go to your University of Calgary e-mail addresses only.

**Tutorials:**

Students are expected to attend scheduled tutorials. During the tutorials, the TA will discuss pre-assigned questions, coding issues and additional material relevant to the course that is not covered in lectures.

**Grade Determination and Examination Details:**

Five Assignments 35% (7% each)  
 Midterm Exam (Feb. 14) 25%  
 Final Exam 40%

*Grading Scale*

A+	95 – 100	B	73 – 76	C-	60 – 62
A	85 – 94	B-	70 – 72	D+	56 – 59
A-	80 – 84	C+	67 – 69	D	50 – 55
B+	77 – 79	C	63 – 66	F	0 – 49

A passing grade on any particular component of the course is not required for a student to pass the course as a whole.

As per the Writing Across the Curriculum Statement in the Calendar, writing and grading thereof will be a factor in the evaluation of student work.

Any student work that remains undistributed after the last day of classes will be available to students through the instructor's office during the instructor's office hours.

The final examination will be comprehensive, scheduled by the Registrar, held in a classroom, and last 2 hours. If a student cannot write their final exam on the date assigned by the Registrar's Office, they need to apply for a deferred exam [www.ucalgary.ca/registrar/exams/deferred final](http://www.ucalgary.ca/registrar/exams/deferred_final). Under no circumstance will this be accommodated by the Department.

Tests and exams will not involve multiple choice questions. Non-programmable calculators WILL be allowed during the writing of tests or final examinations.

THERE WILL BE NO MAKEUP OR DEFERRED QUIZZES/TESTS/EXAMS under any circumstances, nor may the quizzes/tests/exams be written early. Students unable to write the quizzes/tests/exams because of documented illness, family emergency, religious observance, or university-sanctioned event will have the weight shifted to the final examination; otherwise a grade of zero will be assigned.

**Reappraisal of Grades and Intellectual Honesty:**

*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>

*Statement of Intellectual Dishonesty, see Calendar K.4*

<http://www.ucalgary.ca/pubs/calendar/current/k-4.html>

*Plagiarism and Other Academic Misconduct, see Calendar K.5*

<http://www.ucalgary.ca/pubs/calendar/current/k-5.html>

**Academic Accommodations:**

The student accommodation policy can be found at: [ucalgary.ca/access/accommodations/policy](http://ucalgary.ca/access/accommodations/policy).

Students needing an accommodation because of a disability or medical condition should communicate this need to Student Accessibility Services in accordance with the Procedure for Accommodations for Students with Disabilities [ucalgary.ca/policies/files/policies/student-accommodation-policy](http://ucalgary.ca/policies/files/policies/student-accommodation-policy).

Students needing an Accommodation based on a Protected Ground other than disability should communicate this need, preferably in writing, to the course instructor.

**Important Dates:**

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

**Student Organizations:**

Faculty of Arts Students' Association (F.A.S.A.):

Economics Department Representative

Office: SS 803, E-mail: [econrep@fasaucalgary.ca](mailto:econrep@fasaucalgary.ca) and Web: [www.fasaucalgary.ca](http://www.fasaucalgary.ca).

Society of Undergraduates in Economics:

<https://www.ucalgarysue.com/>.

Society of Undergraduates in Economics is a student run organization whose main purpose is to assist undergraduate economics students to succeed both academically and socially at the University of Calgary. Services include access to the exam bank, career events such as Industry Night and information sessions, mentorship programs, and social events for members. They invite you to join by contacting SUE at [societyofundergradsineconomics@gmail.com](mailto:societyofundergradsineconomics@gmail.com).

**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](mailto: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 Library Block.
- Online writing resources are available at <http://www.ucalgary.ca/ssc/resources/writing-support>.

**Evacuation Assembly Point:**

In case of an emergency evacuation during class, students must gather at the designated assembly point nearest to the classroom. The assembly point for this classroom is ICT- Food court.

**Safewalk:**

The Safewalk program provides volunteers to walk students safely to their destination anywhere on campus. This service is free and available 24 hrs/day, 365 days a year. **Call 403-220-5333.**

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

Personal information is collected in accordance with FOIP. For more information, see <http://www.ucalgary.ca/legalservices/foip/foip-hia>.

**Internet and Electronic Communication Device information:**

The use of cell phones for any purpose in class is prohibited. Computers and tablets may be used for note-taking.

