

## Economics 611.08 (Econ 705) (L03) (PhD Econometrics I)

Instructor: Arvind Magesan  
Phone: 403-220-5276  
Email: arvindmagesan@gmail.com

Lecture Location: SS 423  
Lecture Days/Time: TR 2:30-3:45

Office: SS 430  
Office Hours: TBA

(Fall 2016)

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### Course Description

This is a first course in the theoretical underpinnings of identification, estimation and inference in modern microeconometrics. We will begin by reviewing the theoretical concepts in probability and statistics that allow us to assess the properties and behavior of an estimator. We will then devote considerable time to understanding the workhorse of empirical micro, the linear in parameters model. We will first study the motivation for the model, what the model “identifies,” and one way to use data to recover the parameters of the model, the OLS estimator. We will then understand how the OLS estimator behaves in “large samples,” and what happens to the estimator when the assumptions underlying the simple model fail to hold.

In the pursuit of causality, or of “deep” or “structural” parameters, the simple linear model is often not sufficient given the observational data we have access to. We then move on to the most common approach to identification of causal and structural parameters, instrumental variables. As we will see, least squares is not generally applicable in the instrumental variables case, so we learn the Generalized Method of Moments (GMM), a method applicable to a wide variety of economic models, and study its properties. Finally, we introduce the “gold standard” estimator, the Maximum Likelihood Estimator. We will see how it can be used instead of the OLS estimator, and what the tradeoffs to doing so are, and how it can be used if we have a non-linear model. The course will conclude with a rigorous treatment of hypothesis testing.

### Course Objectives/Learning Outcomes

By the end of the course, students will have a strong understanding of the theory that underlies the most commonly applied estimation techniques in econometrics. Students will be able to not only use “pen and paper” to derive properties of estimators, but will be able to use computational methods to evaluate the estimators.

### Prerequisites/corequisites

Econ 615

**Required Textbook(s)**

Cameron and Trivedi: Microeconometrics: Methods and Applications.

**Recommended Textbook(s)**

Angrist and Pischke: Mostly Harmless Econometrics.

**Reserved Readings**

Cameron and Trivedi: Microeconometrics: Methods and Applications.

Angrist and Pischke: Mostly Harmless Econometrics.

Wooldridge: Econometric Analysis of Cross Section and Panel Data

Wooldridge: Introductory Econometrics

Manski: Identification and Prediction for the Social Sciences

**Course Requirements/Assessments:**

**Assignments** 25%

**Midterm (Thurs Oct 20)** 25%

**Final** 50%

**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.

**Grade Determination and Final Examination Details**

Department of Economics Criteria for Letter Grades. Economics professors use the following criteria when assigning letter grades:

Grade	Grade Point Value	Description	Grade	Grade Point Value	Description
A+	4.00	Outstanding	C+	2.30	All grades below "B-" are indicative of failure at the graduate level and cannot be counted toward Faculty of Graduate Studies course requirements. Individual programs may require a higher passing grade.
A	4.00	Excellent-superior performance, showing-comprehensive understanding of subject matter	C	2.00	
A-	3.70	Very good performance	C-	1.70	
B+	3.30	Good performance	D+	1.00	
B	3.00	Satisfactory performance	D	1.00	
B-	2.70	Minimum pass for students in the Faculty of Graduate Studies	F	0	

**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.

There will be a department scheduled final examination, held in a classroom, lasting 2 hours. Non-programmable calculators **WILL** be allowed during the writing of tests or final examinations.

Tests and exams **WILL NOT** involve multiple choice questions.

**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>

A student who feels that a piece of graded term work (e.g., term paper, essay, test) has been unfairly graded, may have the work re-graded as follows. The student shall discuss the work with the instructor within 15 days of being notified about the mark or of the item's return to the class; no reappraisal of term work is permitted after the 15 days. If not satisfied, the student shall immediately take the matter to the Head of the department offering the course, who will arrange for a reassessment of the work within the next 15 days. The reappraisal of term work may cause the grade to be raised, lowered, or to remain the same. If the student is not satisfied with the decision and wishes to appeal, the student shall address a letter of appeal to the Dean of the faculty offering the course within 15 days of the unfavourable decision. In the letter, the student must clearly and fully state the decision being appealed, the grounds for appeal, and the remedies being sought, along with any special circumstances that warrant an appeal of the reappraisal. The student should include as much written documentation as possible.

**Plagiarism and Other Academic Misconduct**

Intellectual honesty is the cornerstone of the development and acquisition of knowledge and requires that the contribution of others be acknowledged. Consequently, plagiarism or cheating on any assignment is regarded as an extremely serious academic offense. Plagiarism involves submitting or presenting work in a course as if it were the student's own work done expressly for that particular course when, in fact, it is not. Students should examine sections of the University Calendar that present a Statement of Intellectual honesty and definitions and penalties associated with Plagiarism/Cheating/Other Academic Misconduct,

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

**Academic Accommodation**

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. For additional information on support services and accommodations for students with disabilities, Visit [www.ucalgary.ca/access/](http://www.ucalgary.ca/access/).

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 <http://www.ucalgary.ca/policies/files/policies/student-accommodation-policy.pdf>

Students who have not registered with the Disability Resource Centre are not eligible for formal academic accommodation. You are also required to discuss your needs with your instructor no later than 14 days after the start of this course.

**Absence from a Test/Exam**

THERE WILL BE NO MAKEUP OR DEFERRED QUIZZES under any circumstances, nor may the quizzes be written early. Students unable to write the quizzes 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. If a student cannot write their final exam on the date assigned by the Department, they need to arrange for a deferred exam with the department.

**Important Dates**

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

Faculty of Grad Studies website: <http://grad.ucalgary.ca/home>

Graduate Students Association: <http://gsa.ucalgary.ca/>

Professional Development for Grad Students

Workshops and resources can be found at <http://www.ucalgary.ca/mygradskills/>

Economics Graduate Association: <http://econ.ucalgary.ca/ega/>

**Evacuation Assembly Point**

In case of an emergency evacuation during class, students must gather at the designated assembly point nearest to the classroom. The list of assembly points is found at [www.ucalgary.ca/emergencyplan/assemblypoints](http://www.ucalgary.ca/emergencyplan/assemblypoints)

Please check this website and note the nearest assembly point for this course

**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**