



## Department of Economics Course Outline

<b>Course:</b>	Economics 395 [Use of Statistics in Economics]	<b>Term:</b>	Spring 2012
<b>Time:</b>	TR 09:00 – 11:50 (Lab: TR 13:00 – 13:50)	<b>Section:</b>	20
<b>Instructor:</b>	Liang Chen	<b>Place:</b>	Lecture: ST 130 Lab: SS 020
<b>Office:</b>	SS 415	<b>Telephone:</b>	403-220-4099
<b>Office Hours:</b>	R 15:00 -16:00	<b>E-Mail:</b>	<a href="mailto:liachen@ucalgary.ca">liachen@ucalgary.ca</a>

### Textbook(s):

Hill, *Use of Statistics in Economics*, 2009 John Wiley & Sons [**Required Text**]

Lee C. Adkins, R. Carter Hill, *Using Stata For Principles of Econometrics*, 3<sup>rd</sup> Edition, 2008 John Wiley & Sons [**Required Text**]

### Book(s) on Reserve:

R. Carter Hill, William E. Griffiths, and Guay C. Lim, *Principles of Econometrics*, 2008 John Wiley & Sons

### Blackboard:

This course will make use of blackboard – students who are registered in the course can logon at <http://blackboard.ucalgary.ca/webapps/login>

### Course Outline:

Prerequisites: Econ 201, 203 and Stats 211 or 213.

Building on the fundamental mechanics of statistics and probability as presented in Stats 211 or 213, Econ 395 familiarizes students with the empirical application of statistical principles to problems of measurement in economics. The course focuses on the intuition and application of

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statistical reasoning, the gathering and manipulation of economic data, and the use of standard econometric software. The core of this course comprises Random Variables, Expectation Theory, Probability Distributions, Hypothesis Testing and the Two-Variable and Multi-Variable Linear Regression Model.

### Topics Covered

*Random Variables:* The role of random variables as the fundamental building block of econometric models; the use of expectation theory including the conditional expectation operator as the main tool for investigating the characteristics of econometric relationships; the role of probability theory in expectations; sampling and sampling distributions; probability density and cumulative distribution functions.

*Data Gathering and Manipulation:* Instruction on searching for and downloading economic variables from the main economic data sources in Canada; transforming and modifying data to be read into an econometric software package.

*Single and Multi-Variate Probability Distributions:* Instruction on using and interpreting the Uni-variate and Multi-variate Normal distribution; extensions to the Student -t, Chi-squared and F distributions with empirical applications.

*Hypothesis Testing and Inference:* Single and joint hypothesis tests, Type I and Type II errors and p-values; choosing the correct test statistic for the measurement problem.

*The Least Square Regression Estimator:* The two-variable regression model; interpreting the variables, the coefficients and the error term; confidence intervals, goodness-of-fit, hypothesis testing and introduction to multi-variable linear regression models.

*Applications of Econometric Software:* Instruction on using a standard econometric software package; reading data, descriptive statistics, applying the least squares estimator, interpreting econometric results, carrying through with and the empirical interpretation of hypothesis testing and other standard econometric tests; graphical methods.

***Students MUST attend lab presentations.*** The course will use software Excel and STATA. Part of the lab time will be devoted to assignment work handed in during the lab.

### **Grade Determination and Final Examination Details:**

Topic	Units	Grade	
Assignments	5	30%	To be discussed in 1 <sup>st</sup> lecture
Midterm	1	30%	May 31
Final Examination	(2 Hours)	40%	As scheduled by the Registrar

The format and due dates of the assignments and midterm will be discussed during the first lecture. Late assignments will not be accepted. Students may work in small groups of 2 students on assignments, and a group file is to be handed in. Students in the group will receive the same mark for the theory and analysis part of assignment. Part of the lab time will be devoted to assignment work handed in during the lab.

Tests and final exams are marked on a numerical (percentage) basis, and then converted to letter grades. The course grade is then calculated using the weights indicated above. As a guide to determining standing, these letter grade equivalences will generally apply:

A+	97 – 100	B+	81 – 85	C+	66– 69	D+	53 – 56
A	90 – 96	B	75 – 80	C	61 - 65	D	49 – 52
A-	86 - 89	B-	70 - 74	C-	57 - 60	F	0 - 48

Programmable calculators are NOT allowed during the writing of tests or final examinations. Non-programmable calculators WILL be allowed during the writing of tests or final examinations, but cell-phones are strictly forbidden during the writing of examinations.

No deferred midterm will be given. In case of documented illness or family emergency, the extra weight will be shifted to the final examination. The Instructor should be *notified in advance* if a student will be unable to write a midterm. In any case, documentation must be provided as soon as possible (within a day or so of the missed midterm).

There will be a Registrar scheduled **final examination**, lasting 2 hours, and it may be held in a gym. The FULL COURSE will be covered.

Tests and exams MAY involve multiple choice questions.

#### Notes:

- Students seeking reappraisal of a piece of graded term work (assignments, midterms, etc.) should discuss their work with the Instructor *within seven* days of the work being returned to the class. Please make an appointment to discuss your work.
- Midterm tests and the final examination will only be given on the indicated dates, not before.
- Make-up midterm tests/assignments and deferred midterm tests/assignments **will not be given**. In cases of documented illness, documented family emergency, or documented religious observance, extra weight will be given to the final examination.
- It is the student's responsibility to request academic accommodations. If you are a student with a documented disability who may require academic accommodation and have not registered with the Disability Resource Centre, please contact their office at 403-220-8237. 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 seven (7) days after the start of this course.

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Society of Undergraduates in Economics (S.U.E.):

[www.ucalgary.ca/sue](http://www.ucalgary.ca/sue)

Society of Undergraduates in Economics is a student run organization whose main purpose is to assist undergraduate economics students succeed both academically and socially at the University of Calgary. Services include access to the exam bank, career partnerships with the Career Centre through hosting industry nights and information sessions, recognizing achievements in teaching, and organizing social events for members. Join now by contacting [sue@ucalgary.ca](mailto:sue@ucalgary.ca).

*Faculty of Arts Program Advising and Student Information Resources*

- Have a question, but not sure where to start? The new Faculty of Arts Program Information Centre (PIC) is your information resource for everything in Arts! Drop in at SS110, call us at 403-220-3580 or email us 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.
- For program planning and advice, contact the Student Success Centre (formerly the Undergraduate programs Office) at (403) 220-5881 or visit them in their new space on the 3<sup>rd</sup> Floor of the Taylor Family Digital Library.
- For registration (add/drop/swap), paying fees and assistance with your Student Centre, contact Enrolment Services at (403) 210-ROCK [7625] or visit them at the MacKimmie Library Block.
- Safewalk / Campus Security: 220-5333
- Emergency Assembly Location – Professional Faculties Food Court

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