



Department of Economics and Finance

ECON* 3740 (1)
Introduction to Econometrics
Winter 2014



Instructor: Fraser Summerfield, MacK. 710, Ext. 53235
E-Mail: fsummerf@uoguelph.ca
Office Hours: Mon. 8:30 – 9:30, Thurs. 10:00 – 11:00

Classes: Mon., Wed., Fri. 12:30-1:20, MacK 031

Labs: Section 0101 Fri 11:30-12:20, MacK 028
Section 0102 Wed 14:30-15:20, MacK 028
Section 0103 Wed 15:30-16:20, MacK 028

Final Exam: **TBA**

It is your responsibility as a student to be aware of and to abide by the University's policies regarding academic misconduct, e-mail communication, maintaining copies of out-of class assignments, what to do when you cannot meet a course requirement and the drop date for this semester. To better understand these policies, visit:

https://dev.web.uoguelph.ca/economics_d7/important-notice-about-students-responsibilities-and-university-policies

COURSE OUTLINE

COURSE DESCRIPTION:

The purpose of this course is to familiarize undergraduate students with basic techniques of econometric analysis. We will learn how to test economic hypotheses, and estimate simple economic models and relationships. The goal of the course is to combine theory and practical applications to enable students to perform basic analysis of real world data.

This course requires a basic understanding of calculus and familiarity with algebra. Those students who did not take ECON*2740 or STAT*2040 recently are advised to review these principles since this course relies heavily on these concepts.

Lab sessions will be held weekly in addition to the main lectures. Through the labs, you will gain experience with econometric software by examining models applied to real data sets. These sessions will be essential to for the project component of the course.

Homework will be assigned throughout the semester. The exercises are not graded but form excellent practice questions for the examinations in the course.

Student assessment will include two in-class midterm exams, a final exam and an independent project. The project requires students to formulate a research question, collect the appropriate data and provide analysis of this data using the techniques taught in class. This project should be a student's own original work and the University of Guelph plagiarism policy applies in full. There will be a presentation on how to find and collect your data in class on **February 11th**. Please plan to attend. A proposal of your project will also be due in class on March 8th. The proposal is a chance for you to get feedback and assistance with your project at an early stage.

Policy regarding student assessments:

- Missed examinations without medical or compassionate grounds result in a zero, therefore you must make arrangements with your instructor ahead of time if you can not attend the exam for another reason.
- Late assignments are penalized 5% per 24 hours. In order to ensure students receive their assignment feedback before the final exam, late assignments and will not be accepted after 4 days past the due date and time. Extensions for the project are generally not possible so please plan your time accordingly.

PREREQUISITES: ECON*2310, ECON*2410, ECON*2740 or STAT*2040 of STAT*2060 or STAT*2080), (ECON*2770 or MATH*1210)

REQUIRED TEXTBOOK:

(UE) "Using Econometrics, A Practical Guide", by A.H. Studenmund, 6th edition. Earlier editions of the text should be fine, although suggested practice questions and page numbers may differ.

ASSESSMENT: (Details to follow in class)

20% Midterm 1	February 7 (In Class)
20% Midterm 2	March 14 (In Class)
20% Empirical Project	March 31 (Due at 11:00 am)
Project Proposal	March 7 (In Class)
40% Final exam	April 8 (Location TBD)

EVALUATION: You will be asked to complete an evaluation of this course at some time during the last two weeks of the semester. The Department of Economics policy regarding the conduct and use of these evaluations will be found at

<https://www.uoguelph.ca/economics/course-evaluation>

WEB SITE

Announcements and grades will be posted on the course website at Courselink.

TOPICS (in sequence):

1. Review of Statistical Principles (UE Ch17)
2. Introduction to basic regression analysis (UE Ch1)
3. Ordinary Least Squares Regression (UE Ch2)
4. Classical regression assumptions in detail (UE Ch4)
5. Hypothesis Testing (UE Ch5)
6. Specification (UE Ch6,7)
7. Logit and Probit Models (UE Ch13)
8. Violations of classical assumptions: Multicollinearity, Heteroskedasticity, Serial Correlation (UE Ch 8,9,10)
9. Time Series (UE Ch 12)

The Department of Economics and Finance *Learning Objectives (skills and knowledge competencies)* for this course:

Skills:

- a) *Written communication*—The course assignment is in the style of an academic research paper which is graded on content as well as effective communication of the analytical results
- b) *Numerical problem solving*—Algebraic questions will be common on exams, and are a necessity to **understanding** the econometric estimation techniques.
- c) *Analytical problem solving*—Exams will require students to **interpret** and analyze empirical results.
- d) *Real world problem solving* – The empirical project requires students to **construct** a research question, **find** credible data, perform analysis on this data, and ultimately answer a research question which has implications for the real world
- e) *Professional and ethical awareness and conduct* – Students must abide by the plagiarism policy while performing their own original research. Projects are checked for plagiarism. In addition **time management** skills are developed through strict project deadlines.

Knowledge:

- a) *Mathematical Methodology*: **Apply** algebra and calculus skills to decompose the OLS estimator, calculate distributional statistics and hypothesis tests.
- b) *Statistical and Econometric Methodology*: **Analyze** relationships in data using regression analysis and **understand** key statistical concepts such as sampling, probability, hypothesis testing, confidence intervals. Students will also