Econ 371: Econometrics I

Instructor: F. Summerfield
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Office: MULH 3071

Lectures: MULH 4022   *Mon.* **15:45-17:00**   & *Wed .*   **14:15-15:30**

Office Hours: MULH 3071   *Mon.***11:15-12:15** & *Wed* **9:45-10:45**
  (masks mandatory)   *Tues.* **9:30-11:00** & *Thur.* **9:30-11:00**

Course Description

The course will introduce students to the Econometrics – the statistical practices used to evaluate economic theory and quantify economic relationships. Part of this course will be econometric theory: the principles and mathematics that define the proper way to measure economic relationships from (cross-sectional) data. Concurrently, students will learn to use computer software to implement these methods using real world data. Please note the prerequisites for the course in the academic calendar. A basic background in statistics and mathematics is assumed.

Course Materials

- **Lecture Notes**
  Students are responsible for lecture content. Absence from class is not grounds for relief of this responsibility.

- **Textbook (required)**
   "Introductory Econometrics" by: Jeffrey Wooldridge. Used editions should be easy to obtain. We will use the 7th edition, however, earlier editions (4 - 6) are fine.

- **Software (required but provided)** – We will use the STATA software, available through the university's cloud server (MyLabApps). You may use an alternative software at your own risk. See details below. You may also purchase STATA software at a reasonable price to run on your laptop (first, ask me to be sure of the version)

Readings (chapters listed from JW)

Part A)	INTRODUCTION & REVIEW	(2.5 Weeks)
01:	What is Econometrics	Ch1
02:	Random Variables	Apx B.1
03:	Probability Distributions	Apx B.2 – B.3
04:	Joint Distributions	Apx B.4 – B.5
	Introduction to Stata	**Notes**

Part B)	THE SIMPLE REGRESSION MODEL	(3 Weeks)
05:	Linear Regression Model	Ch2.1
06:	OLS Estimation	Ch2.2
07:	Method of Moments & OLS Properties	Ch2.2 – 2.3
08:	Model Fit and Units of Measure	Ch2.3 – 2.4
09:	Sampling Distributions	Ch2.5, Apx C.1 – C.2

Part C)	MULTIPLE REGRESSION	(1.5 Weeks)
10:	Multivariate OLS	Ch3.1 – 3.2 & 6.3a
11:	Specification - variables	Ch3.3 – 3.4a & 3.5
12:	Specification - functional form	Ch2.4b & Ch 6.2a-b

Part D)	INFERENCE & TESTING	(1.5 Weeks)
13:	Testing single parameters	Ch4.1 – 4.3
14:	Testing multiple parameters	Ch4.4 & 4.5
15:	OLS Asymptotics	Ch5.1- Ch5.2

Part E)	PRACTICAL MATTERS	(2 Weeks)
16:	Binary independent variables	Ch7.1 – 7.3
17:	Binary dependent variable models	Ch7.5 & 17.1 – 17.2
18:	Testing and Robust Inference	Ch8.1 – 8.3
19:	Weighted Least Squares	Ch8.4

* The schedule is approximate and progression through the material may vary. Thus, problem set due-dates may be adjusted as necessary. However, no more than one problem set will be due each week. Solutions will be posted on moodle after each problem set is submitted.

Evaluation

Midterm Exam	Covering Part A and Part B	**25%**
	In Class: Oct. 19th	

Problem Sets	Best 3/4 worth 15% each.	**45%**
	Due: (1) Sep 21st (2) Oct 12th (3) Nov 16th (4) Dec 5th	

Final Exam	Cumulative of Parts A-E, with emphasis on Parts C D and E	**30%**

EXAMS:

Students who miss the Midterm exam due to illness or compassionate reasons will have the opportunity to sit the exam at a later date during office hours. Those wishing to take advantage of this accommodation should contact the instructor no later than one lecture after missing the original exam sitting. The re-write date must be set within 10 calendar days of the original exam. If a this is not possible, the weight will be transferred to the final exam. Standard StFX policies apply in the case of illness during final exams.

PROBLEM SETS:

Problem sets will include a mixture of textbook questions and applied questions that make use of the statistical software package STATA. Please note that I am happy for students to use other packages they may already be familiar with (for example R), however I can offer somewhat less help with R, and perhaps no help with other software packages such as SPSS. Therefore I recommend STATA. MS Excel will not be capable enough for everything we do in this course.

Each problem set will be posted on moodle at least one week before its due date. **Unless campus is closed, you must print and submit a hard copy during lecture.** You may support each other by working in groups to solve the problems. Ideally, attempt the problems on your own and come together to compare answers and learn from each other. **Note that you must hand in your own unique work**. Interpretation and explanations of answers must not be copied and pasted from your peers. Some assignment questions will also require data analysis that is unique to the student. If students hand in identical assignments, I will split the grade awarded equally among students with identical submissions.

There are a total of 4 problem sets. Late problem sets will not be accepted and will receive a mark of zero; forgiveness to accommodate sickness and other compassionate concerns is automatic because only the best 3 of 4 assignments will count towards the final grade. Students are **highly discouraged** from intentionally skipping a problem set since further accommodation is generally not possible. Furthermore, problem sets are the best practice for exam questions. Students who face particularly difficult circumstances are encouraged to consult with me before missing more than 2 problem sets so appropriate accommodations can be made.

CLOSURES (for weather or public health):

In the event that campus is closed for less than one week:
- Any **exams** falling on days of closure are automatically moved forward to the next lecture following campus re-opening.
- **Assignments** are due as scheduled. I will open an upload portal on moodle.

In the event that a campus closure is announced for a week or more:
- **Exams** falling on days of closure will be re-scheduled and moved online, using moodle.
- **Assignments** are due as scheduled. I will open an upload portal on moodle.

DROP DATE:

Students may drop a course, online in Banner, on or before the relevant deadline (Nov 2nd)

PLANNING AHEAD:

Extra work to make up for low grades will not be possible. It is your responsibility to track your progress over the term and seek help on difficult subjects. I am happy to help *during* the semester.