Department of Economics
Hong Kong University of Science and Technology

Econ 3334 Introduction to Econometrics
Fall, 2019

Lecture Information:
Tuesday and Thursday

Webpage: http://canvas.ust.hk/

Tutorial Information:
Not weekly, to be announced on Canvas.

Instructor Information:
Instructor: Xun (Sean) Lu
Office: Room 6077 LSK
Office Hour: Tuesday 12:30pm-1:20pm (or by appointment, or any time you can find me)
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Teaching Assistant (TA) Information:
TA: Peter Tsui
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Course Overview: Econometrics bridges the gap between economic theory and real-world empirical data. This course introduces you to econometric techniques and their applications in economic analysis. It begins with a review of basic statistical tools, and then focuses on linear regression with one regressor and linear regression with multiple regresssors. The emphasis is on practical issues in econometric analysis of cross-sectional data. Stata will be used for computer-based calculations.

Prerequisites
Basic statistics or consent of instructor

Textbook
Required:
Stock, James and Mark Watson. *Introduction to Econometrics*. (4th edition), Pearson.

Recommended:
Jeffrey M. Wooldridge. *Introductory Econometrics*. (7th edition), South-Western.
* This book is more difficult than the one by Stock and Watson, and is recommended for students who are not afraid of challenges.

Course Webpage
I will distribute materials for this class through Canvas, so please make sure to check Canvas at least twice per week for announcements and postings.

Lectures
Please make sure to attend all the lectures. There is a lot of information in the book, and my job is to explain the most important topics during class (which turn out to be the ones I focus on for exams). You are responsible for all material covered during lectures. Also, I may check attendance and give bonus points. I will post the lecture notes several days before the lectures. It will be extremely helpful to read the notes in advance.

Tutorials
We also have about 8 tutorials for this class that is separate from the lectures. The TA will teach you how to use Stata and solve some practice questions. The tutorial is NOT weekly. Each time, the TA will announce it through Canvas and send emails several days before the tutorial.

Computer Package
We will use the statistic software Stata and Python to analyze data.

You do NOT need to buy Stata. Stata is available in the computer lab LSKG021. I will reserve some time slots for ECON3334. The details will be announced on Canvas. Other time slots depend on whether the lab is occupied. You can also access Stata in your own computer using "Virtual Barn" (more details will be provided).

Python is free.

Problem Sets
There will be six problem sets, each of which will carry a weight of 3% towards the final grade. The lowest problem set grade will be dropped. The problem sets will involve both theoretical and empirical work. Group study and free discussion are encouraged. But you should submit your own answers.

Each problem set is to be handed in at the beginning of class on the day it is due. Problem sets will not be accepted by email or in department mailboxes. If you need to hand in a problem set early because you cannot be in class on the day the problem set is due, then please make arrangements with your TA before the problem set is due. Late submission of problem sets will generally not be accepted!

Examinations
There will be one mid-term exams and one final exam. The mid-term carries a weight of 30%. The final exam will have 55% weight. The final will be cumulative and cover all the course materials.

All exams will be closed book/note. Please bring a basic scientific calculator (non-programmable) to the exams. There will be no make-up exams. If you miss a midterm, you will receive a zero. The only exception is a verifiable medical reason, in which case the weight of the missed mid-term will be shifted to the final exam.

Finally, if you are caught cheating during an exam, you will receive a zero on the exam, may fail the course, and may be subject to further disciplinary action by HKUST.

Performance Evaluation

The grades in this course will be based on the following:

Assessment Activities	Weighting
Six problems sets	15%
Mid-term	30%
Final Exam	55%

Re-grading Policy

All grading problems must be rectified within one week from the time a problem set or an exam is returned. Re-grading of exams may not be allowed if they were written in pencil. Please talk to the TA first regarding the re-grading. If there are some further issues, you can contact the instructor.

Office Hours/Email

Please drop by during my office hours or the TA's office hours if you need help with anything. Send us an email if you have any concerns; we will try to respond within 24 hours. Please note, however, that emails are not the proper venue to answer particular problem set questions; we can help you with that during office hours or the tutorial.

Course Intended Learning Outcomes (Course ILO):

On completion of this course, you will be able to: [1]

1. Understand the significance of key assumptions used in regression models, and explain the relationship between those assumptions and properties of estimators (BBA 1.1, 1.2, 3; ECOF 1.1, 1.2, 3).
2. Apply regression analysis to economic data, conduct statistical inference and interpret the results (BBA 4.1, 4.2; ECOF 4.1, 4.2, 4.3).
3. Use the software Stata to conduct econometric analysis (BBA 7.1, 7.2, 7.3; ECOF 7.1, 7.2, 7.3).
4. Collect your own dataset to conduct empirical analysis, and provide answers to economic questions (BBA 2, 4.3, 4.4, 9; ECOF 2, 4.4, 4.5, 9).
5. Present your understanding of certain economic problems, and use empirical results to justify your explanation (BBA 2, 4.3, 4.4, 9; ECOF 2, 4.4, 4.5, 9).

Teaching Approach

Teaching and Learning Activities	Role in the course	Course ILOs addressed
Lectures	Learn key concepts and methods and their application	1, 2, 3, 4, 5
Tutorials	Review basic statistics, teach how to use Stata, and discuss answers to problem sets	1, 2, 3, 4, 5

[1] Numbers in parentheses are specific Program Intended Learning Outcomes (PILOs) for the BBA program and the ECOF program; for details see: http://www.bm.ust.hk/econ/programs/BBA.html and http://www.bm.ust.hk/econ/programs/BSc.html.

Tentative Schedule

Please note here is that the schedule below is tentative, meaning that I may need to change things as the session progresses. Therefore, please **DO NOT** make any travel plans or other commitments based on this schedule, since I may change the day of the midterm.

	Date	Day	Topic	Reading
1	Sep. 3	Tues	Topic 1: Introduction to Econometrics	SW Ch.1
2	Sep. 5	Thurs	Topic 2: Review of probability theory	SW Ch.2
3	Sep. 10	Tues	Topic 2: Review of probability theory	SW Ch.2
4	Sep. 12	Thurs	Topic 2: Review of probability theory	SW Ch.2
5	Sep. 17	Tues	Topic 3: Review of basic statistics	SW Ch.3
6	Sep. 19	Thurs	Topic 3: Review of basic statistics	SW Ch.3
7	Sep. 24	Tues	Topic 3: Review of basic statistics	SW Ch.3
8	Sep. 26	Thurs	Topic 4: Simple linear regression: Estimation	SW Ch.4
9	Oct. 1	Tues	Holiday	
10	Oct. 3	Thurs	Topic 4: Simple linear regression: Estimation	SW Ch.4
11	Oct. 8	Tues	Topic 4: Simple linear regression: Estimation	SW Ch.4
12	Oct. 10	Thurs	Topic 4: Simple linear regression: Estimation	SW Ch.4
13	Oct. 15	Tues	Topic 5: Simple linear regression: Inference	SW Ch.5
14	Oct. 17	Thurs	Topic 5: Simple linear regression: Inference	SW Ch.5
15	Oct. 22	Tues	Mid-term exam	
16	Oct. 24	Thurs	Topic 6: Multiple regression: Estimation	SW Ch.6
17	Oct. 29	Tues	Topic 6: Multiple regression: Estimation	SW Ch.6
18	Oct. 31	Thurs	Topic 6: Multiple regression: Estimation	SW Ch.6
19	Nov. 5	Tues	Topic 7: Multiple regression: Inference	SW Ch.7
20	Nov. 7	Thurs	Topic 7: Multiple regression: Inference	SW Ch.7
21	Nov. 12	Tues	Topic 7: Multiple regression: Inference	SW Ch.7
22	Nov. 14	Thurs	Topic 8: Nonlinear regression function	SW Ch.8
23	Nov. 19	Tues	Topic 8: Nonlinear regression function	SW Ch.8
24	Nov. 21	Thurs	Topic 8: Nonlinear regression function	SW Ch.8
25	Nov. 26	Tues	Topic 9: A guide for empirical studies	SW Ch.9
26	Nov. 28	Thurs	Topic 9: A guide for empirical studies	SW Ch.9

- 'SW' stands for Stock and Watson (4th edition). You should read **the entire chapter**, but particularly focus on the sections in each chapter that contain the material we cover during the lectures.

- This schedule is tentative; I may need to adjust it as the session progresses. **DO NOT** make travel plans or other commitments based on this tentative schedule since I may move the Midterm to a different day.