Kuwait University
College of Business Administration
Economics Department

Course Syllabus
Fall 2022
ECON 405 – Econometrics
Dr. Dhari Alrasheed

Class Time and Location
Lecture: Sun/Tue/Thu, 5:00pm – 5:50 pm; Room C3-1001
Lab: Tue 4:00pm—4:50pm; A3-1084 (Economics Dept. Lab)

Contact Information
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Teaching Assistant
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Office Hours: TBD

Course Description
Introduction to econometrics by merging mathematics, probability, and statistics to answer economic questions using data. The course covers model specification, estimation, and inference, using multiple linear regression and ordinary least squares estimation, while also incorporating nonlinear relationships and discrete variables. Violations of the classical linear model assumptions are examined, including endogeneity, heteroskedasticity, correlated data, non-normality, and nonlinearity in parameters. Emphasis is placed on practical applications of econometric methods to answer questions of cause and effect and forecast macroeconomic variables.

Prerequisites
ECON210; ECON211

Course Learning Objectives (CLOs)
Upon successful completion of the course, students will be able to:

CLO1. Establish the theoretical foundations of key models and estimators.
CLO2. Identify data structures, specify appropriate econometric models, & develop estimation/forecasting strategies.
CLO3. Differentiate critically between spurious correlations and causal relationships.
CLO4. Use statistical software to organize data, estimate model parameters, draw inferential conclusions, and communicate findings in written form.

CLO Mapping to CBA Skill Based Competency Goals*

CLO	Competency Goal			
	Analytical	Communication	Information Technology	Business Ethics
1	R			
2	I	I		I
3	I	I		
4	A	A	I	R

* CBA Competency Goals can be found at the end of this document

Type of Emphases:

- **(I)ntroduce:** Students will be introduced to the skill and their grasp of it assessed in the course.
- **(A)pply:** The course will not cover the skill. Students should have a high-level grasp of the skill & are required to apply it in the course.
- **(R)einforce:** Students should have an introductory-level grasp of the skill and the course will improve their mastery to a higher level.

Required Material

Textbook: Carter-Hill, Griffiths, and Lim, *Principles of Econometrics,* (4th ed. or later), Wiley.
Alternative: Wooldridge, *Introductory Econometrics: A Modern Approach* (5th ed. or later), Cengage.
Additional Material: Provided by the instructor.
Software: Stata/BE. Obtain a student license at: https://www.stata.com/order/new/edu/gradplans/student-pricing
E-Learning System : http://moodle.ku.edu.kw

Course Requirements

- **Participation:** to receive full credit, you must attend regularly and participate actively.
- **Homework:** 4—5 empirical assignments using Stata.
- **Lab:** mandatory weekly lab attendance and exercises.
- **Midterm exam:** written exam held in week 8.
- **Empirical Project:** empirical report due at the end of the semester.
- **Final Exam:** comprehensive final exam covering all of the course material.
- **Bonus:** there will be a 5% bonus based on additional short assignments (e.g. essays).

Course Policies

- **Attendance and Participation:** Every student in this course must abide by the Kuwait University Policy on Attendance (published in the Student Guide, Chapter 3, Section 13). A copy of the Student Guide can be accessed online on: http://kuweb.ku.edu.kw/cs/groups/ku/documents/ku_content/kuw055940.pdf
- **Cheating and Plagiarism:** Every student in this course must abide by the Kuwait University Policy on Cheating and Plagiarism (published in the Student Guide, Chapter 3, Section 2). A copy of the Student Guide can be accessed online on: http://kuweb.ku.edu.kw/cs/groups/ku/documents/ku_content/kuw055940.pdf
  Please carefully note all sources and assistance when you turn in your work. Under no circumstances should you take credit for work that is not yours. You should neither receive nor give any unauthorized assistance on any deliverable. If you have any questions about what constitutes "unauthorized assistance" please email me before the deliverable is submitted.
- **Lab:** attendance is mandatory. In each lab, you will complete and submit a coding exercise that is essential for learning the commands and techniques used in the homework.
- **Late Submission:** homework must be submitted by midnight on the due date. 20% penalty upon entering each subsequent day. Submissions after homework is graded and returned will receive zero credit.
- **Class Etiquette**: avoid distractions. If you are late, walk in quietly and take the first seat available. Refrain from using phones or taking pictures of the board. Beverages are allowed, but not food.
- **Learning**: learning is optimized by training your eyes, ears, and hands to collectively receive, store, and retrieve information. This is accomplished by reading in advance, paying attention in class, asking questions, taking good notes, and struggling through homework independently. Refrain from taking pictures of the board in class as it is distractive and ineffective.
- **Office Hours**: questions about homework or exam preparation must be attempted by you first, then directed to the TA, then to me. If you find yourself struggling in the course, inform me early on so that we discuss plans for improvement. You are also welcome to discuss with me anything about the course or economics in general.
- **Exam grades:** Grades are final, but you can ask to review your exam within a week after grades are posted. Grade disputes are governed by the Student Guide.
- **Make-up Exams:** midterm make-up will NOT be given. If you have to miss it, its grade will be re-allocated to the final only in extreme and unavoidable circumstances (serious illness, hospitalization, health quarantine, or death of a 1st degree relative) with supporting documents and the instructor's prior approval. A make-up final exam may be given under the same extreme circumstances and prior approval as per the Student Guide.
- **Disability:** inform me if you have a disability and need assistance or accommodation.

- **Online Contingency:** if KU/CBA policy changes to online testing, exams will be administered on Moodle with double-video proctoring. I may also administer a post-assessment oral quiz to ensure exam integrity, in which case it will count towards the grade of the assessment.
- **Values:** this syllabus is a contract between you and me. I promise you trust, respect, fairness, and honesty. I expect the same from you.

Grading

The scores in this course will be the weighted average of the following items:

Weight	Description
5%	Participation
20%	Homework
10%	Lab
20%	Midterm exam
15%	Empirical project
30%	Final exam
5%	Bonus
100% (+5%)	TOTAL

Grade Distribution

Grade	Range
A	≥ 95
A-	≥ 90 and < 95
B+	≥ 87 and < 90
B	≥ 83 and < 87
B-	≥ 80 and < 83
C+	≥ 77 and < 80
C	≥ 73 and < 77
C-	≥ 70 and < 73
D+	≥ 65 and < 70
D	≥ 60 and < 65
F	< 60

Course Outline

Title	Topics	Chapter	Weeks
Part I: Preliminaries	• Introduction	1	1-2
	• Math, Probability, & Statistics Review	Probability Primer, Appendix A, B, C	
	• Causal Inference; Randomized Control Trials	Lecture Notes	
Part II: Linear Regression	• Linear Regression Model	2.1-2.3, 5.1-5.2	3-5
	• OLS Properties	2.4-2.6, 5.3, App. 5B	
	• Inference	3.1-3.5, 5.4, 5.5, 6.1	
	• Functional Form	2.8, 2.9, 5.6, 7.1-7.3	
Part III: Estimation & Inference Problems	• Heteroskedasticity	8, 15.2.1, App. 15A	6-8
	• Correlated Data; Cluster Sampling		
	• Endogeneity; Instrumental Variables	10.2-10.4, App. 10B, 10C	
Part IV: Panel Data	• Unobserved Heterogeneity	15.1-15.3	9
	• Pooled & Fixed Effects Regression		
Part V: Time Series	• Stationary Time Series	9	10-12
	• Non-Stationary Time Series	12.1-12.5	
Part VI: Binary Choice	• Maximum Likelihood Estimation	App. C8	13
	• Linear Probability Model; Probit; Logit	16.1-16.2	

Important Dates

Date	Event
Tue. 15/11/2022 (Week 8)	Midterm Exam 1
Thu. 29/12/2022	Final Exam; 11:00am—1:00pm
Thu. 29/12/2022	Empirical Project due

CBA Competency Goals

1. Analytical Competency: A CBA graduate will be able to use analytical skills to solve business problems and make a well-supported business decision.

Student Learning Objectives:

1.1. Use appropriate analytical techniques to solve a given business problem.
1.2. Critically evaluate multiple solutions to a business problem.
1.3. Make well-supported business decisions.

2. Communication Competency: A CBA graduate will be able to communicate effectively in a wide variety of business settings.

Student Learning Objectives:

2.1. Deliver clear, concise, and audience-centered presentations.
2.2. Write clear, concise, and audience-centered business documents.

3. Information Technology Competency: A CBA graduate will be able to utilize Information Technology for the completion of business tasks.

Student Learning Objectives:

3.1. Use data-processing tools to analyze or solve business problems.

4. Ethical Competency: A CBA graduate will be able to recognize ethical issues present in business environment, analyze the tradeoffs between different ethical perspectives, and make a well-supported ethical decision.

Student Learning Objectives:

4.1. Identify the ethical dimensions of a business decision.
4.2. Recognize and analyze the tradeoffs created by application of competing ethical perspectives.
4.3. Formulate and defend a well-supported recommendation for the resolution of an ethical issue.

5. General Business Knowledge: A CBA graduate will be able to demonstrate a basic understanding of the main business disciplines' concepts and theories.

Student Learning Objectives:

5.1. Acquire a fundamental understanding of knowledge from the main business disciplines (e.g. finance, accounting, marketing, and management information systems, among others).