Kuwait University
College of Business Administration
Economics Department

Course Syllabus
ECON 350 – Econometrics[1]
(ECON 405 – Econometrics)[2]
Spring 2023/2024
Dr. Ebrahim Alebrahim

Lecture Time and Location

Monday and Wednesday from 11:00 AM to 12:15 PM in Room D3 1005. Please make sure to attend all lectures and arrive on time.

Contact Information

Location: Economics Department – 3rd Floor – Zone A – Office No. 1032

Email: ebrahim.alebrahim@ku.edu.kw

Office Hours: Mon and Wed. from 8:00 AM to 9:15 AM, as well as available by appointment or walk-ins.

Teaching Assistant

Name: Mahmoud Arab

Location: Economics Department – 3rd Floor – Zone A – Office No. ####

Email: mahmoud.arab@ku.edu.kw

Office Hours: TBD

Tutorial: Tuesday 15:00-15:50 PM, Room 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. Emphasis is placed on practical applications of econometric methods to answer questions of cause and effect and forecast macroeconomic variables.

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[1] For students admitted starting from the 2021/2022 academic year
[2] For students admitted before the 2021/2022 academic year

Prerequisites

For students admitted starting from the 2021/2022 academic year:
    ECON 230 (Mathematics for Economists) & ISOM 220 (Business Statistics II)
For students admitted before the 2021/2022 academic year:
    ECON 210 (Microeconomic Theory), ECON 211 (Macroeconomic Theory), & ISOM 220 (Business Statistics II)

Corequisites

For students admitted starting from the 2021/2022 academic year:
    ELU 126 (English for Academic Purposes I) & ECON 320 (Intermediate Microeconomics)
For students admitted before the 2021/2022 academic year:
    No corequisites

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, and develop estimation and 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[3]

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

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 and 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 edition or later, Wiley. (HGL)

    Alternative: Jefferey Wooldridge, *Introductory Econometrics: A Modern Approach*, 5th edition or later, Cengage. (JW)

Software: R language, and R-Studio.

https://posit.co/download/rstudio-desktop/

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[3] CBA Competency Goals can be found at the end of this document

Additional Material: Lecture slides are available on MS Teams.

E-Learning System: MS Teams, and Moodle

Course Website: http://moodle.ku.edu.kw

Lab
There will be mandatory weekly lab attendance and exercises. In each lab, you will complete and submit a coding exercise that is essential for learning the commands and techniques used in the homework.

Course Requirements
- **Exam-Style:** Exams will primarily consist of questions requiring written responses that can be conceptual, analytical, or quantitative in nature.

Course Policies
- **Attendance and Participation:** Every student in this course must abide by the Kuwait University Policy on Attendance (published in the Curriculum System Bylaws, Chapter 3, Section 13). A proper copy of the student guide can be accessed online at:
  http://kuweb.ku.edu.kw/DO/ar/Students/StudentGuide/index.htm
  Attendance will be recorded in Moodle. You can check your attendance on Moodle. You should report any discrepancies within three business days for corrections. Absence notices and warnings will be sent through formal university channels and platforms, such as email, Moodle, and MS Teams.
- **Cheating and Plagiarism:** Every student in this course must abide by the Kuwait University Policy on Cheating and Plagiarism (published in the student guide).
- 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 contact me through email or MS Teams before the deliverable is submitted.

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

Weight	Description
5%	Assignments
25%	Quizzes
30%	Major Exams
40%	Final Exam
100%	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	Readings on Textbook	Week (Tentative)
Math, Probability, & Statistics Review	Probability Primer, Appendix A, B, C	1-2
Introduction	1	
Causal Inference	Lecture Notes	
Linear Regression Model	HGL: 2.1-2.3, 5.1-5.2 JW: 2, 3	3-5
OLS Properties	HGL: 2.4-2.6, 5.3, App. 5B JW: 2, 3, 5	
Statistical Inference	HGL: 3.1-3.5, 5.4, 5.5, 6.1 JW: 4	
Functional Form	HGL: 2.8, 2.9, 5.6, 7.1-7.3 JW: 6, 7	
Heteroskedasticity	HGL: 8, 15.2.1, App. 15A JW: 8, 12	6-8
Correlated Data and Cluster Sampling		
Endogeneity and Instrumental Variables	HGL: 10.2-10.4, App. 10B, 10C JW: 15	
Panel Data	HGL: 15.1-15.3 JW: 13	9
Stationary Time Series	HGL: 9	10-12
Non-Stationary Time Series	JW: 12.1-12.5 JW: 12	
Maximum Likelihood Estimation	App. C8	13
Binary Choice Models	16.1-16.2	

Important Dates

Date*	Time	Event
27/03/2024	Class time	Exam 1
29/04/2024	Class time	Exam 2
13/05/2024	-	Last day of classes
20/05/2024	08:00-10:00	Final Exam*

*The instructor reserves the right to adjust exam dates, if necessary, in coordination with students.

CBA Competency Goals

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

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 various 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 the 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 the 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).