**Kuwait University**

**College of Business Administration**

**Master of Economics Program**

Course Syllabus

ECON 504 – Econometrics

Dr. Dhari Alrasheed

# Lecture Time and Location

Sun; 5:00pm – 7:50pm; D1-1006

# Contact Information

**Location**:Economics Department, A3-1019

**Email**: dhari.alrasheed@ku.edu.kw

**Office**: 24988414

**Office Hours**: Sun, 4:00 PM – 4:45 PM or by appointment

# Teaching Assistant

**Name**: Mr. Mahmoud Arab

**Location**:Economics Department; A3-1067

**Email:** Mahmoud.arab@ku.edu.kw

**Office Hours**:Mon 11:00—12:15, Tue 3:00—4:00, Wed 4:00—5:00

# Course Description

Econometrics merges mathematical models with statistical methods and probability theory to answer economic questions using data. Using linear regression as the workhorse, the course covers model specification, estimation, inference, and forecasting. The course is also an introduction to causal inference where you learn to differentiate critically between correlation and causation as well as identify and estimate the causal effects of endogenous variables. The underlying theories are presented, but emphasis is on applying them empirically using statistical software. This course will transition you from being an economics student to a practicing economist.

# Course Learning Objectives (CLOs)

Upon successful completion of the course, students will be able to:

1. Understand the theoretical foundations and properties of key models and estimators.
2. Identify data structures, specify appropriate econometric models, and develop estimation and forecasting strategies.
3. Differentiate critically between spurious correlations and causal relationships.
4. Use statistical software to organize data, estimate model parameters, and draw inferential conclusions.
5. Interpret estimation results and communicate findings in written form.

# CLO Mapping to CBA Skill Based Competency Goals[[1]](#footnote-2)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| CLO | Competency Goal | | | |
| Economic Theory | Quantitative Reasoning | Critical Thinking | Communication |
| 1 | I |  |  |  |
| 2 |  | R |  |  |
| 3 |  |  | I |  |
| 4 |  | I |  |  |
| 5 |  |  | R | A |

# 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**: Any of the following:

* R. Carter-Hill, W. E. Griffiths, & G. C. Lim, *Principles of Econometrics,* 4th edition or later, Wiley.
* J. Wooldridge, *Introductory Econometrics,* 5th edition or later, Cengage.

**Additional Material**: Lecture notes provided by the instructor.

**E-Learning System**: MS Teams and Moodle.

**Course Website** : <https://moodle.ku.edu.kw>

# Course Requirements

* **Participation:** to receive full credit, you must participate at least once a week.
* **Homework:** 5—6 empirical assignments.
* **Essays:** short summaries of articles, chapters, podcasts, and videos.
* **Midterm Exam:** held in class in week 8.
* **Project:** empirical report due at the end of the semester.
* **Final Exam:** comprehensive final exam covering all of the course material.

# 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.

* **Late Submission:** Homework must be submitted by midnight on the due date. 20% is deducted upon entering each subsequent day. Submissions after the homework is graded & 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 as it is distracting 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 in general, 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-ups will NOT be given. If you have to miss the midterm exam, 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 |
| 5% | Essays |
| 25% | Midterm Exam |
| 15% | Project |
| 30% | 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 | Topics | Weeks |
| Part I: Preliminaries | Introduction  Math, Probability, and Statistics Review  Ceteris Paribus; Randomized Control Trials | 1—2 |
| Part II: Linear Regression | Linear Regression Model  Ordinary Least Squares Estimation & Properties  Inference  Functional Form | 3—5 |
| Part III: Estimation & Inference Problems | Heteroskedasticity; Cluster Sampling  Endogeneity; Instrumental Variables | 6—8 |
| Part IV: Panel Data | Unobserved Heterogeneity  Pooled and Fixed Effects Estimators | 9 |
| Part V: Time Series | Stationarity Time Series  Non-Stationary Time Series | 10—12 |
| Part VI: Binary Choice Models | Maximum Likelihood  Linear Probability, Probit, and Logit Models | 13 |

# Important Dates

|  |  |
| --- | --- |
| Date | Event |
| 12/12/2021 | Midterm exam |
| TBD | Project Deadline |
| TBD | Final Exam |

# Tips for Success

* This course is dense with numerous new concepts and vocabulary. Missing lectures is costly to your learning potential. Ask questions, take good notes, and seek help.
* Homework is cumulative; missing any assignment is detrimental.
* WARNING! Homework assignments are long and time-consuming—start early!
* Collaborate with classmates on homework by checking Stata codes and discussing answers. Copying blindly is unhelpful (and constitutes plagiarism).
* Utilize the Stata help files.
* Participate actively in class by asking questions and sharing your thoughts.

**Master of Economics Competency Goals:**

1. **Economic Theory:** Our students should demonstrate expertise in applying core economic theories to solve global and complex economic problems.

**Student Learning Objectives:**

1.1 Acquire a deep understanding of how markets and economies operate

1.2 Apply micro/macro-economic theories to solve complex economic problems.

1.3 Analyze in depth the impact of alternative regulatory activities in individual markets and their effect on the welfare of the population

1.4 Recognize that although economists address economic problems with a common approach, the science is ever changing, and one’s approach must be regularly evaluated and updated.

1. **Quantitative Reasoning Skills:** Our students should acquire sufficient mathematical and statistical skills to be able to analyze economic problems and to make use of those skills in their future careers

**Student Learning Objectives:**

2.1 Understand how to collect and use empirical evidence to evaluate economic argument.

2.2 Conduct appropriate statistical analysis of data using appropriate econometric techniques and explain the statistical problems involved.

2.3 Interpret statistical results and understand the limitations of the analysis.

1. **Critical Thinking Skills:** Our students should demonstrate the ability to be critical thinkers when conducting qualitative and quantitative economic analysis.

**Student Learning Objectives:**

3.1 Creating abstract models of complex socio-economic systems

3.2 Drawing conclusions and policy prescriptions while critically evaluating them

3.3 Distinguish between causal relationships and spurious correlations

1. **Communication Skills:** Our students will demonstrate advanced communication skills in a variety of business settings.

**Student Learning Objectives:**

4.1 Deliver clear, concise, and persuasive presentations.

4.2 Write clear, concise, and persuasive business documents.

1. CBA Competency Goals can be found at the end of this document [↑](#footnote-ref-2)