

**College of Social Sciences**

**Department of Economics**

 **ECN 5012: Econometrics**

Term: Fall2023/2023-2024

Instructor: Alma Kudebayeva PhD

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Office Hours: T-Th 10.00-11.30 and 16.00-18.00, Valikhanov bld. #211 or by Zoom

Credits: : 3 credits /5 ECTS credits

Prerequisites: ECN2083, ECN3103, ECN3185, ECN3186

Course Dates: Saturday

Course Times: 10:00-12:45

Classroom: #308 Valikhanov bld.

**Course Description**

**The development of an econometric model is an integral part of econometric analysis. The objective of this course is to cover the theory and practical problems of the classical linear regression models and their complications such as endogeneity. The course covers nonlinear models in the application of economics and business. Topics cover a review of econometric models and diagnostics. This is followed by a detail discussion of estimations and hypothesis tests of the problems arising from the cross section regression models with spherical, non-spherical disturbances and others. During the course, students are expected to undertake project by utilizing both theoretical and analytical tools of econometric models.**

**Learning objectives**

**The main of objective of the course to develop analytical, statistical skills to analyse data and construct econometric models for the real economic world.**

**To make conclusions based on the estimation outputs of the regression models.**

**Intended Learning Outcomes**

**After successfully completing this course you will be able to:**

1. **Understand Econometric Methods and Tools**
2. **Formulate Simple linear Regression their estimate, inferential problems and analyze those;**
3. **Formulate Multiple linear Regression models, their estimate, inferential problems and analyze those;**
4. **Make Familiarity with the Multicollinearity Problems and remedial Measures;**
5. **Make Familiarity with the Heteroscedasticity Problems and their remedial Measures;**
6. **Make Familiarity with the Autocorrelation Problems and their remedial Measures;**
7. **Make Familiarity with the Model Specifications, diagnostic tests and interpret the results for different related econometric models;**
8. **Application of Econometric Theories and Methods with Real World Data by Using Stata software**

**Required Resources**

* **Course Website:** [**Moodle**](http://www.elms.umd.edu/)
* **L-drive: presentations and reading materials**
* **Recommended Texts**

**WJW Introductory econometrics : a modern approach / Jeffrey M. Wooldridge. Boston: Cengage Learning, 2016. SIXTH ED.**

**GWG Econometric analysis / William H. Greene. Pearson, 2018. 8TH ED**

**DC Introduction to Econometrics**

 **Dougherty,C.**

 **New York: Palgrave, Macmillan, 2011**

**Additional References**

**AH Applied Econometrics,**

 **Dimitrios Asteriou, Stephen G. Hall**

 **New York: Palgrave, Macmillan, 2011**

 **BS Boffelli, Simona, Financial econometrics using Stata Stata Press, 2016.**

 **1st Edition**

**Stata18 Manuals**

**Policies and Resources**

**It is our shared responsibility to know and abide by the KIMEP University policies that relate to all courses, which include topics like:**

* **Academic integrity**
* **Student and instructor conduct**
* **Accessibility and accommodations**
* **Attendance and excused absences**
* **Grades and appeals**
* **Copyright and intellectual property**
* **The Use of Generative AI Software**

**Course Guidelines**

***Communication with Instructor:***

**Email: If you need to reach out and communicate with me, please email me at almak@kimep.kz. We do not use WhatsApp or Telegram for communication.**

**Please DO reach out about personal, academic, and intellectual concerns/questions. DO NOT email me with questions that are easily found in the syllabus or on Moodle (e.g., When is the assignment due? When are office hours?). While I will do my best to respond to emails within 24 hours, you will more likely receive email responses from me on weekdays from 9:00am-18:00pm.**

***Communication with Peers:***

**It is important that we agree to conduct ourselves in a professional manner and that we work together to foster a classroom environment in which we can respectfully discuss and deliberate controversial questions. Students are encouraged to express opinions, however, they are expected to voice arguments supported them with evidence.**

**Any behavior that threatens classroom atmosphere and learning environment (including harassment, sexual harassment, and ethnic, gender and/or culturally derogatory language) will not be tolerated. Please alert me immediately if you feel threatened, dismissed, or silenced at any point during our semester.**

**Major Assignments**

**Guidelines for the Final Project:**

1. **Define the topic from the economic subjects, some examples are:**
* **Determinants of Poverty**
* **Foreign direct investments and economic growth;**
* **Economic growth and inequality;**
* **Determinants of Inequality;**
* **Gender gaps in earnings;**
* **Gender gaps in education;**
* **Gender differences in employment;**
* **Unemployment and inflation.**

**2. Collect data, you have to find statistic data for your research, which can be freely available.**

**3. Define an economic model, hypothesis that you would like to test.**

**4. Run regressions, provide tests for multicollinearity, heteroscedasticity, autocorrelation and normality.**

**5. Give the analysis and interpretation of the coefficients of regression.**

**6. Submit me the hard and electronic copy of your final project, do file in STATA and data file that you used in the project.**

**Sample Grading Structure**

|  |  |
| --- | --- |
| **Components** | **Grades** |
|  |  |
| **Attendance**  | **5%**  |
| **Midterm #1** | **25%** |
| **Home assignment**  |  **5%** |
| **Midterm #2** | **25%** |
| **Final Project** | **40%** |
|  |  |
| **Total** | **100%** |

**Grading Scale**

|  |  |
| --- | --- |
| **90-100      Pass        A+****85-89        Pass        A****80-84        Pass        A-****77-79        Pass        B+****73-76        Pass        B****70-72        Pass        B-****67-69        Pass        C+** | **63-66        Pass        C****60-62        Pass        C-****57-59        Pass        D+****53-56        Pass        D****50-52        Pass        D-****Below 50 Fail    F**  |

**Course Policies**

***Attendance Policy***

**If a student fails to attend fewer than 80% of class time (or full 12 weeks of teaching), then “F” grade will be assigned to the student.**

**KIMEP benchmarks best practices from top universities when developing equitable academic policies.**

**If a student fails to attend classes, that equals more than 20% of classroom instruction, then penalties will incur.**

**If a student misses more than 20% of classes, 10 percentage points are going to be deducted from the overall score of the course. It is up to the student to monitor his/her own attendance, which starts from the first day of class until the end of the semester.**

***\*Note: Those with special circumstances, such as pregnancy, military service, disability, severe illness, etc., the student must discuss, provide appropriate documentation and be granted any accommodation in the faculty member's discretion, before such circumstance requires total absences in a course to exceed twenty percent in order to avoid strict application of this policy in their situations.***

***Office hours***

**Students are encouraged to meet with the instructor during scheduled office hours or by appointment to discuss their written work and academic performance. If your instructor writes to you, it will be to your KIMEP email address; thus it is important you check this email address regularly. All concerns about grades or issues related to the course should be expressed in a timely manner and prior to the end of the semester. It is a student responsibility to seek from the instructor additional feedback on assignments, grading guidelines and policies.**

***Academic integrity***

**Academic honesty is expected of all students. Cheating and plagiarism are violations of academic honesty. Any student found violating the academic policy will receive an automatic “zero” for the assignment. According to the catalog, if the weight of the assignment where the violation has occurred is more than 10%, the offence is a level 2 offence and has to be referred to the Academic Integrity Committee.**

**You are responsible for familiarizing yourself with the University's policy on Academic Honesty. Please review the Academic Integrity Policy reproduced in KIMEP Catalogue (p.130) and on the KIMEP website at** [**https://www.kimep.kz/about/files/2018/02/Catalog-for-AY-2023-2024\_final.pdf**](https://www.kimep.kz/about/files/2018/02/Catalog-for-AY-2023-2024_final.pdf) **.**

**Any fact or idea by another person should be cited using APA style in writing and through oral citation during speeches. Representing another author's work as your own is plagiarism. Other forms of cheating include:**

* **Copying from another student;**
* **Submitting someone else’s work;**
* **Using unauthorized notes;**
* **Not indicating sources (both in-text and after text);**
* **Falsification of sources;**
* **Falsification of data;**
* **Self-plagiarism (‘recycling’ your earlier work); and**
* **Mechanical paraphrase, electronic translations, editing services, and other cases noted by the instructor**

***Policy on the Use of Generative AI Software***

**Generative AI is software, for example, ChatGPT, can perform advanced processing of text at skill levels that at least appear similar to a human. Generative AI software is quickly being adopted in many facets of internet services, legal practice, and everyday programming. At the same time, Generative AI presents risks to KIMEP’s shared pedagogical mission.**

**For this reason, KIMEP adopts the following general guidelines providing structure to use of Generative AI.**

**Student Responsibility:**

* **Use of AI tools is permitted to help brainstorm assignments, to revise existing personally generated work, or to prepare for exams.**
* **Students must clearly attribute what AI-generated material informed or supported their work by clearly marking tasks that were generated by AI.**
* **Students’ primary responsibility is to ensure the accuracy of AI-produced information.**
* **All work submitted by students for grading must be produced by students themselves (individually or groups).**
* **All written assignments must be uploaded into the Learning Management System (Moodle).**
* **Students must NOT engage hiring external person or company to write assignments**
* **It is prohibited to use generative AI tools to generate ANY portion of the assignment.**
* **Using AI tools, like ChatGPT, to generate content qualifies as academic dishonesty.**

**Instructor Responsibility:**

* **Instructors should provide sufficient weight to the quality of the answers on written assignments. Weak answers result in lower grading and potentially a failing grade for the assignment.**
* **A sufficient grade weight to assessment should be provided (especially) written work done in the classroom.**
* **Instructors need to monitor and be aware of written assignments and the policy provided herein.**
* **Instructors need to be the gatekeepers of quality of instruction, learning and academic integrity.**

**Please be aware that CSS has a default policy to reduce the grade for assignments which score more than 50% on standard AI detection software such as Turnitin (automatic on moodle). But no need to refer to it in the syllabus.**

***Late assignments***

**All assignments, unless otherwise indicated, must be submitted on the days they are due. Assignments that are late for up to 48 hours can be accepted with points’ deduction (up to 30% of the total depending on the assignment). Submissions later than 48 hours are not accepted**

***Format***

**All homework assignments (unless otherwise noted) should have follow the APA style guidelines.**

**Weekly Plan**

|  |  |  |
| --- | --- | --- |
| **Week** | **Topics Covered** | **Reference** |
| **1-3** | **Linear Regression with One Regressor**  | **JW: Ch1,2** **D/C: Ch1, 2** |
|  | **Hypothesis test and confidence intervals**  | **L:\Alma Kudebayeva\Fall2017\ECN5012 Econometrics/ Chapter1, Chapter2** |
| **4-5** | **Linear Regression with Multiple Regressors. Hypothesis Tests and Confidence Intervals in Multiple Regression** | **JW: Ch 6,7** |
|  |  | **D/C: Ch3** |
|  |  | **L:\Alma Kudebayeva\Fall2017\ECN5012 Econometrics/ Chapter3** |
| **6** | **Midterm 1 exam** |  |
|  | **Midterm break** |  |
| **7** | **Nonlinear Models and Dummy Variables** | **D/C Ch4,5** |
|  |  | **L:\Alma Kudebayeva\Fall2017\ECN5012 Econometrics/ Chapter4, Chapter5** |
| **8-9** | **Heteroscedasticity**  | **D/C: Ch 7** |
|  |  | **L:\Alma Kudebayeva\Fall2017\ECN5012 Econometrics/ Chapter7** |
| **10** | **Midterm 2** |  |
| **11** | **Simultaneous Equations Estimation**  | **D/C: Ch9****L:\Alma Kudebayeva\Fall2017\ECN5012 Econometrics/ Chapter9** |
| **12** | **Autocorrelation. Tests for autocorrelation: Durbin-Watson statistics. Normality of the disturbance term. Tests for normality (**  | **B/C: Ch 5****D/C Ch12****L:\Alma Kudebayeva\Fall2017\ECN5012 Econometrics/ Normality\_autocorrelation** |
| **13-15** |  **Writing up of the Final Project** | **Submission of Final Project** |

**This syllabus may be subject to pre-announced changes!**