

AMERICAN UNIVERSITY OF CENTRAL ASIA
DEPARTMENT OF ECONOMICS
MASTER'S PROGRAM

ECONOMETRICS II

Fall 2022

Instructor

Prof. Nazgul Jenish
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Classes

Lectures Saturday 12:45 – 14:10

Course Description:

This course is the second in the Econometrics sequence for MSc. Economics students. The course objective is to equip students with basic methods and skills required for statistical economic analysis, including estimation and inference in economic models. The course covers the following topics: qualitative and limited dependent variable models and maximum likelihood estimator, simultaneous equation models and two-stage-least-squares estimator, time series models, panel data models and associated estimation methods.

Prerequisites:

Students are expected to have taken Econometrics I course based on the Wooldridge textbook (see below) and have mastered the following topics covered in Econometrics I course: bivariate and multivariate linear regression model, ordinary least squares (OLS) estimation, OLS small sample properties, confidence intervals and hypothesis testing, and heteroscedasticity. Students are assumed to have working knowledge of calculus and matrix algebra, and to have completed at least one undergraduate course in statistics.

Students are also expected to have beginner skills in Stata – statistical package used in the course – acquired either through Econometrics I course or independently. Students who have concerns about the adequacy of their mathematical and statistical background should contact me within the first week of classes.

Required Text:

Introductory Econometrics. A Modern Approach. 4th Edition. Jeffrey M. Wooldridge, South-Western, Cengage Learning, 2009

Any edition starting from the 4th edition and up can be used. The problem numbers in homeworks will be based on the 4th edition. If you have a different version of the textbook, you will need to map the problem numbers from the 4th edition to your textbook edition.

Statistical Package/Software: Stata (can be accessed in AUCA computer labs)

Requirements & Grading:

You are expected to attend all lectures and seminars, as well as to complete eight homework assignments during the semester. Assignments will be posted on the e-Course webpage and will be due at the beginning of lectures. No late assignments will be accepted. Completion of the assignments is strongly recommended as they are an integral part of the learning process. They will also have a direct impact on your final grade.

There will be one mid-term and one final in-class exams. You are required to take both exams. Course grades will be determined as follows:

Final exam	50%
Mid-term exam	30%
Homework assignments	<u>20%</u>
Total	100%

The following grading scale will be used:

- A= 90+
- A-=85-89
- B+=80-84
- B= 76-80
- B-=72-76
- C+=68-71
- C=64-67
- C-=60-63
- D+=56-59
- D-=50-55
- F<50

Policies:

The standard AUCA rules and regulations concerning absences, exams, grading, and violations of academic integrity will apply to this course. Please consult the AUCA website.

Course Outline: (I may add, drop or change the order of topics and chapters.)

- I. Qualitative and Limited Dependent Variable Models
 - Maximum Likelihood Estimation
 - Multiple Regression with Qualitative Information: Binary Variables
 - Limited Dependent Variable Models and Sample Selection Corrections

II. Times Series Models

Basic Regression with Time Series Data

Further Issues in Using OLS with Time Series Data

Serial Correlation and Heteroscedasticity in Time Series Regressions

III. Simultaneous Equation Models

Instrumental Variables Estimation and Two Stage Least Squares

Simultaneous Equations Models

IV. Panel Data Models

Fixed Effects Estimator

Random Effects Estimator. Test of Fixed Effects

First Difference Estimator