



KYIV SCHOOL  
OF ECONOMICS

# Quantitative methods

*KSE MBA Fall Semester 2017*

With support from the Swedish Government

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## Faculty information



Education: PhD at Taras Shevchenko National University of Kyiv. Study at Ludwig Maximilian University of Munich (Germany).

Professional Experience: Associate Professor at Taras Shevchenko National University of Kyiv, ECTS Coordinator, Member of Science and Methodic Council. Tutor at Edinburgh Business School. Visiting Professor at Vilnius University (Lithuania). Senior Research Fellow at Academy of Financial Management. National Higher Reform Education Expert (since 2010).

Key Specialization: Economic cybernetics, Econometrics

Courses taught at KSE: Quantitative methods

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## Course description

Quantitative methods are widely used in various economic works. The modern investigation is almost impossible without the use of statistic or econometric models. Studying the course "Quantitative methods" provides students with the skills of creative thinking, develops the ability to analyse economic phenomena, find the relationship between them.

Teaching methods combine lectures with work on computers. Such activity involves the practical application of acquired skills to solve a variety of econometric and statistical problems.

## Learning Outcomes

The main aim of the discipline is to familiarize students with research methods, methods of validation, assessment of quantitative and qualitative hypothesis in micro- and macroeconomics on the basis of statistical analysis. The knowledge gained by students during the study of econometrics, is widely used in management, marketing, finance.



Learning outcomes of the course are the follows:

- mastering the methods of construction and evaluation of econometric models;
- practical skills of quantitative measurement of the relationship between economic indicators;
- application of criteria for testing hypotheses about the quality of economic indicators and forms of their interrelation;
- theoretical knowledge in mathematical modelling of economic processes and phenomena;
- application the results of econometric analysis to forecast and make economic decisions.

## Class Schedule

Date/time	No	Topics	Reference / Instructor
2.09/14.15-17.30	1	Introduction to QM. Introduction to Combinatorics.	Andriy Stavytskyy
3.09/9.00-12.15	2	Theory of probabilities. Probability tasks in our life.	Andriy Stavytskyy
16.09/10.00-13.15	3	Conditional probabilities and their application.	Andriy Stavytskyy
17.09/13.15-16.30	4	Binominal distribution. Distribution approximation.	Andriy Stavytskyy
30.09/10.00-13.15	5	Statistical methods. Samples. Numerical characteristics of samples.	Andriy Stavytskyy
1.10/13.15-16.30	6	Samples in our life. Hypothesis testing.	Andriy Stavytskyy
21.10/14.15-17.30	7	Econometrics, methods, applications. Main modelling principles.	Andriy Stavytskyy
22.10/13.15-16.30	8	Linear regression in EViews.	Andriy Stavytskyy
4.11/10.00-13.15	9	Multiple regressions. Statistical hypothesis and their economical application.	Andriy Stavytskyy
5.11/9.00-12.15	10	Statistical hypothesis in EViews.	Andriy Stavytskyy
18.11/14.15-17.30	11	Special types of regressions. Non-linear models. Dummy variables.	Andriy Stavytskyy
19.11/9.00-12.15	12	Final comprehensive Exam	Andriy Stavytskyy



## Readings

### Required

- Quantitative Methods Lecture Notes by A. Stavytskyy, 2017 (can be found at KSE resources or at [http://andriystav.cc.ua/T\\_QM\\_E.html](http://andriystav.cc.ua/T_QM_E.html))

### Additional Books:

- Bruce E. Hansen ECONOMETRICS, 2016 (<http://www.ssc.wisc.edu/~bhansen/econometrics/Econometrics.pdf>)
- Newbold, Paul. Statistics for business and economics / Paul Newbold, William L. Carlson, Betty M. Thorne.—8th ed. ( <https://core.ac.uk/download/files/432/12024057.pdf>)

## Assignments

Students are expected to participate classes with personal notebooks with preinstalled MS Excel and EViews 9 ([www.eviews.com](http://www.eviews.com)) software (trial version is possible).

During classes special tests on computers and paper problems will be proposed for evaluation.

The final exam will include five practical problems, including one task on computers.

## Grading Policy

Attendance and participation – 10%

Homework – 10%

Midterm exam – 20%

Project – 20%

Final exam – 40%

## Attendance Policy

It is expected that students will be actively participate in class discussions and pass successfully all required assignments as well as exams. Several additional core requirements are mandatory attributes in order to successfully pass the course (No exceptions to this policy):

- ✓ Please, be present at no less than 75% of classes (person participating in less amount of classes cannot pass final exam)



- ✓ Please, do not delay to classes. The noise from your entrance during in class activity will disturb your colleagues.
- ✓ Please, do not use cellular phones during class time. Your call during in class activity can disturb other participants. You will have time-breaks between classes for calls.
- ✓ Please, prepare to in class activity and discussing before classes.

In order to pass a course a student should be present at no less than 75% of all classes in this course. Otherwise, the student automatically gets an F grade.

## Exam(s)

Exams will be at closed room. Please, take you notebooks to fulfil all tasks.

The final exam will cover all investigated topics. The final exam will include five practical problems, including one task on computers, using EViews software.