ECONOMETRICS

Credit points	**5 CP**		
Semester when the course is delivered	2nd semester		
Study course annotation	The course introduces students to the basic concepts of econometrics. Parallel to this course the students work with GRETEL and MS Excel computer programmes. Real data from the Eurostat database and publications are used in order to build the econometric models. The acquisition of the course helps students to become familiar with the economic processes of modern Latvia, Europe and the world and to carry out research with the help of processing of statistical data using econometric methods.		
The aim of the course	To enable master students to: • To acquire knowledge of the basics and problems of econometrics; • To develop theoretical and practical competences for conducting research by using modern statistical methods and computer programs, to summarize empirical coherence with economic variables by analysing financial situation, to make reliable forecasts in the spheres of banking, finance and various financial processes; to develop and adopt optimal and sound management solutions To promote and develop scientific-research skills, critical attitude, ability to provide objective judgment and self-esteem as well as personal development of future researchers		
Description of the results of the study course and assessment criteria:	**Knowledge**	**Skills (knowledge, communication, general skills)**	**Competence (analysis, generalization and evaluation)**
	Knowledge of the guidelines of the modern econometrics.	The ability to use modern statistical methods and computer programs to analyse the financial situation of the companies, to make forecasts in the spheres of banking, finance, various financial processes; develop and adopt optimal and sound management solutions, namely: •to develop econometric model based on qualitative analysis of the research object; •to assess the interdependence of economic indicators by using statistical methods; •to interpret the results in terms of the economic nature of the phenomena;	General Science: the ability and readiness to synthesize knowledge by using a variety of methods from different fields of science through research and analysis of a particular economic situation. Use of instrumental: specific terminology of econometrics. Work with information from various sources, skills of scientific report preparation, use of different computer programs. Social- personalities and cultures: self-growth; ability to evaluate accumulated experience, knowledge and information technologies; the ability to critically perceive and verify information using analytical methods of econometrics; the ability to identify and analyse economic problems and social processes through the use of econometric tools and to develop recommendations in the field of economic and social policy.

		•to develop econometric models using regression analysis procedure and to evaluate the quality of created econometric models from the point of view of adequacy of actual data.	Professional: in order to use econometric methods students need to know the fundamentals of econometrics; to develop econometric models on the basis of theoretically economic models, acquiring a wide range of modern econometric research methods; the ability to assess the reliability and validity of results, to interpret results and to develop recommendations for economic development and economic policy. The acquired competencies will allow the MA student to apply them in the development of his / her Master's thesis as well as in further professional activities.

Content of the course	**Topics**	
	1	Introduction. About econometrics.
	2	Revision of the basic concepts in statistics.
	3	Case sizes. Divisions. Testing of statistical hypotheses.
	4	Simple linear regression.
	5	Multivariate regression.
	6	Logarithmic reliability function. Informative criteria.
	7	Multicolinearity.
	8	Residue analysis. Classical regression analysis. Gauss-Markov conditions.
	9	Heteroskedasticity of residues. Test for heteroskedasticity.
	10	Normal distribution of balances.
	11	Diagnostic diagrams.
	12	Nonlinear models. Linearization. Koba-Douglasa function.
	13	Autocorrelation. Autocorrelation tests.
	14	Spatial data, time series data, panel data. Model with fixed effects. Case effects model.
Form of assessment:	Exam	

Required reading:

1. Cottrell, A. (2017). Gretl User's Guide. Gnu Regression, Econometrics and Time-series Library. Department of Economics. Wake Forest University. Riccardo "Jack" Lucchetti. Dipartimento di Economia. Università Politecnica delle Marche. August, 2017. http://gretl.sourceforge.net/gretl-help/gretl-guide.pdf
2. Gujarati, D.N., & Porter, D.C. (2009). Basic Econometrics Fifth Edition. NY: McGraw-Hill. Retrieved from https://www.twirpx.com/file/2033301/.
3. Arhipova, I., Bāliņa, S. (2006). Statistika ekonomikā. Risinājumi ar SPSS un Microsoft Excel. Rīga: Datorzinību Centrs
4. Blūmenaua, Ņ.F. (2019). Ekonometrija. Lekciju konspekts. Rīga: BSA, "Moodle".

Recommended reading:

1. Brooks, C. (2008). Introductory econometrics for finance. Second edition. Cambridge: University Press. Retrieved from www.cambridge.org/9780521873062

2. Dougherty, C. (2011). Introduction to econometrics. Third edition. Oxford University Press. Retrieved from hts://www.twirpx.com/file/2033301.
3. Greene, W.H. (2012). Econometric analysis. Seventh edition. Pearson Education LTD. Retrieved from https://spu.fem.uniag.sk>ksov>obtulovic>EconometricsGREENE. Data from retrieved from http://pages.stern.nyu.edu/~wgreene/Text/econometricanalysis.htm
4. Revina, I. (2002). Ekonometrija. Rīga: LU.
5. Stock, J.H., & Watson, M.W. (2011). Introduction to econometrics. Third edition. Pearson /Addison Wesley. Retrieved from https://econometricsweb.files.wordpress.com

Other information sources:

1. The Econometrics Journal. Wiley Online Library. Retrieved from http://onlinelibrary.wiley.com/journal/10.1111/(ISSN)1368-423X
2. Econometrics – Open Access Journal. Retrieved from http://www.mdpi.com/journal/econometrics
3. Квантиль. Международный эконометрический журнал на русском языке. Retrieved from http://quantile.ru/
4. Eurostat. Your key to European statistics. Database. http://ec.europa.eu/eurostat/data/database
5. BSA bibliotēkas elektroniskā datu bāze(www.bsa.edu.lv):
6. EBSCO (ENG): http://search.ebscohost.com
7. Latvijas nacionālās bibliotēkas datu bāzeshttp://www.lnb.lv).

During the study process changes and additions to the program and the list of references are possible