Code	M17VFA01E	ECTS Credit	6	HUN Credit	6
Module Title:	**APPLIED STATISTICS AND ECONOMETRICS**				
Module Leader:	**Gábor Kőrösi, Professor**		**Sessions**	Mixed lectures and computer exercises.	
Term:	**spring**		**E-mail:**	korosig@ktk.pte.hu	
Short Description:	The subject gives an overview of major methods of empirical work in economics, mostly concentrating on econometric techniques. The methods will be applied to various economic problems, demonstrating their use in practical applications. Students get hands on experiences analysing various economic problems with a variety of approaches. We use gretl for practical work.				
Sessions (weeks):					
February 5	Economic models, data, statistical model. Revision: probability, data description, statistical inference. SW chapters 1-3				
February 12	Linear regression 1: revision of the basic concepts. SW chapters 4 & 5				
February 19	Linear regression 2: single and multiple regressors, estimation, inference, model diagnostics. SW chapters 6 & 7				
February 26	Linear regression 3: single and multiple regressors, estimation, inference, model diagnostics. SW chapters 6 & 7				
March 5	Non-linear models 1: linearization; indicator variables (dummies). SW chapter 8				
March 12	Non-linear models 2: binary dependent variables. SW chapter 11				
March 19	Test.				
March 26	Time series modelling 1: dynamics, forecasting. SW chapters 14 & 15				
April 2	Time series modelling: dynamics, causality. SW chapters 14 & 15				
April 16	Time series modelling: stationarity, non-stationarity. SW chapters 14, 15, parts of 16.				
April 23	Test				
April 30	Endogenous regressors. Panel data. SW chapters 12 & 10.				
May 7	Modelling strategies. Revision. SW chapter 9				
Rationale Including Aims:	Practical work in economics is based on data analysis in most cases, using causal models. The purpose of this course is to teach students the most important methods used in such applied work.				

Learning Outcomes: **Knowledge**	Students get a practical knowledge of the major econometric techniques, including the conditions for proper use, and methods for assessing the validity of their model. They should be able to identify methods needed in a practical situation, do the basic statistical analysis, and interpret the results.
Learning Outcomes: **Skills**	Students will work on various problems, typically using real life data. By the end of the course they should be able to do data analysis properly, on their own, using a simple computer package
Teaching and Learning Strategies:	The course is a mixture of lectures and computer exercises. We shall use data and computer at each major milestone. Technical details of the methodology are not part of the course, but basic knowledge of calculus, linear algebra and probability is necessary.
Assessment Scheme:	Two tests, 19% each Final examination, 62%
Core Learning Materials:	Stock and Watson: Introduction to Econometrics, Addison-Wesley, 2014 (3rd edition). (The 2007 2nd edition is also fine.) Also used: Gretl user's guide Berndt: The Practice of Econometrics, Addison-Wesley, 1991
Optional Learning Material:	Wooldridge: Introductory Econometrics, MIT, 2009 Brooks: Introductory Econometrics for Finance, Cambridge, 2008 Cameron and Trivedi: Microeconometrics, Cambridge, 2005 Kőrösi, Mátyás and Székely: Practical Econometrics, Avebury, 1992 Greene: Econometric Analysis. Prentice Hall, 2008. Pesaran: Time Series and Panel Data Econometrics, Oxford, 2015. Wooldridge: Econometric Analysis of Cross Section and Panel Data, MIT, 2010 Angrist and Pischke: Mastering "metrics", Princeton, 2015 Papers uploaded to Neptun