Course Name : Economic Statistics								
Course Code	Course Type	Regular Semester	Lecture (hours/we ek)	Seminar (hours/we ek)	Lab. (hours/we ek)	Credits	ECTS	
EMS 313	В	Fall	3.00	1.00	0.00	3.50	5.00	
Lecturer		Kevin Bica, Msc						
Assistant								
Course language		English						
	Course level	Bachelor						
DescriptionEMS 313- This course is an introduction to financial econ applied to finance. The course covers computer program Eviews, econometrics (statistical analysis), financial econ macroeconomics, mathematical optimization and probability				nancial econor ter programm nancial econo nand probabil	metrics-data ning and data mics, microe ity models.	science analysis in conomics,		
	Objectives	To provide students with the skills required to research in economics and finance using more advanced econometric practices and models. Real life applications are analyzed via the Eviews 10 econometric package. Laboratory sessions aim students to practice their theoretical knowledge in a practical approach and gain new skills by implementing real life data. By employing such advanced techniques in econometrics, students will be able to perform independently economic and financial analysis.						
Co	ore Concepts	Time series data, panel data, serial correlation, dynamic model, static model, simple linear regression, multiple linear regression, heterogenous relationship, correlation, standard deviation, statistical significance.						

## **Course Outline**

Week	Торіс
1	Introduction to the course. Syllabus presentation. Textbook and Evaluation Method.
2	An introduction to Econometrics. Chapter 1 (pg. 1-45) This chapter describes the main concepts regarding Econometrics and its application. It summarizes the data generation process, sources of economic data and economic data types. At the end, briefly illustrates when and where to employ Econometrics.
3	The simple Linear Regression Model- Cross Sectional Model. Chapter 2 (pg. 46-111) and Chapter 3 (pg. 112-151). The differences between simple and multiple linear regression model. Statistical significance versus practical significance. Hypothesis testing using T-Statistics and Probability values and testing overall model significance and other linear parameters.
4	The Linear Regression Model on a practical assessment employing Eviews 10. Working on real data, Eviews files.
5	Linear Classical Model Assumptions. Chapter 4 (pg. 152-195), Chapter 5 (pg. 196-259) and Chapter 6 (pg. 260-316). This chapter analyzes the multiple regression model and evaluates the linear classical model assumptions. Discussion on the modeling issues, measuring Goodness-of- fit and a brief introduction to the nonlinear relationship of variables – quadratic model.
6	Linear Classical Model Assumptions employing Eviews 10. Practical session on Media Lab. Evaluating the assumptions and solving the issues.
7	Review before Midterm.
8	Midterm

9	An introduction to Time Series in Econometrics. Chapter 9 (pg. 417-480). This chapter introduces the students with the basic concepts of the Time Series in Econometrics. It compares the Cross-Sectional Study with Time Series. Evaluation of Linear Classical Model Assumptions including Serial Correlation and Heteroscedasticity. Hypothesis testing.				
10	Regression with Time Series: Stationarity Variables. Chapter 9 (pg, 417-480).				
11	Regression with Time Series: Nonstationary Variables. Chapter 12 (pg. 563-596). Introduction to OLS. Unit root test for stationarity. How to modify variables in case the assumption is not fulfilled. The lecture will end by estimating regression coefficients.				
12	Time Series in Econometrics employing Eviews10. This week students will work on statistical software Eviews 10. Testing assumptions and model robustness. At the end of the chapter student will be introduced to dummy variables and trend analysis.				
13	Introduction to Panel Data Models. Chapter 15 (pg. 634-680). Discussion on unobserved Heterogeneity, Panel Data Models assumptions. Introduction to pooled OLS. At the end of the lecture students will be able to perform a panel analysis employing large data files.				
14	Project evaluation.				
15	Revision before Final Exam.				
16	Final Exam.				
Prerequisites		The student must attend the course at a minimum rate of 75%.			
Literature		• • R. Carter Hill, Willieam E. Griffiths, Guay C. Lim: Principles of Econometrics (2017). Wiley 5th edition.			
References		<ul> <li>• Advanced Time Series Data Analysis (2019), Wiley. Analysis of Financial Time Series (2010), Wiley.</li> <li>• Econometrics - A modern Approach: Wooldridge J.M. (2016 &amp; 2019), Cengage Learning.</li> </ul>			
Course Outco	Course Outcome				
1	To have skills to set up robust parsimonious econometric models.				
2	To have the ability of testing specification of the model, and to estimate the regression coefficients.				
3	To have the required skills to analyze cross-sectional, time series and panel data models.				
4	Demonstrate advanced analytical skills, employing advanced techniques in statistics with computer based approach.				
5	To model multivariate relationship using either dynamic or static models. To deal with real life decision-making process by analyzing huge data files.				

Course Evaluation				
In-term Studies	Quantity	Percentage		
Midterms	1	20		
Quizzes	0	0		
Projects	0	0		
Term Projects	1	30		
Laboratory	1	10		
Class Participation	1	10		
Total in-term evaluation percent				
Final exam percent				
Total				
ECTS Workload (Based on Student Workload)				

Activities	Quantity	Duration (hours)	Total (hours)	
Course duration (Including the exam week: 16x Total hours of the course)	16	4	64	
Study hours outside the classroom (Preparation, Practice, etc.)	14	4	56	
Duties	1	1	1	
Midterms	1	2	2	
Final Exam	1	2	2	
Other	0	0	0	
Total Work Load				
Total Work Load / 25 (hours)				
ECTS				