COURSE: Econometric Techniques			
DEGREE: Bachelor in Economics		YEAR: 3º	SEMESTER: 1

CRONOGRAM OF THE COURSE

Week	Session	CONTENT OF THE SESSION	GROUP Main	Main	CLASSROOM	Student´s work during the week DESCRIPTION	HOUR	WEEKLY WORK LOAD
1	1	Characteristics of economic time series data. Stochastic processes and time series. Stationarity and ergodicity. Simple autocorrelation function (ACF) and Partial autocorrelation function (PACF). B&D Chapter I + Lecture notes	X			Choose an Empirical Project to be completed during the course. Solving assigned exercises.	1,5	5
1	2	Review-Summary: Computer work: different databases. Graphical analysis. Transformations. Problem 4 in Set I		X		Data search for the Project. Solving assigned exercises.	1,5	
2	3	Univariate stationary models Wold decomposition. ARMA processes. Causal models, invertible models. B&D chapters II & III + Lecture notes	X			Readings and problem set solving.	1,5	5
2	4	Computer room: Introduction to Eviews: import data, graphics, transformations, data generation, regression.		X		Notify the small group instructor the Project chose (country, data and base article) [Could be evaluated] Problem sets, assignments solving and discussion.	1,5	
3	5	Univariate stationary models Estimation and inference on the mean and the ACF. Estimation and inference on the parameter estimates of ARMA models. B&D Chapters II & III + Lecture notes	X			Readings and problem set solving.	1,5	5

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3	6	Review-Summary: Computer work:Simulation of ARMA models. Identification and estimation. Problems 5 & 6 of Set I.		X		Problem sets, assignments solving and discussion.	1,5	
4	7	Univariate stationary models: White noise tests. Model selection (information criteria). Methodologies for the design of ARMA models. Real data example (interest rates, growth rate of GDP, temperature, etc.) B&D chapters V + Lecture notes	X			Readings and problem set solving.	1,5	5
4	8	Review-Summary. Problems 2, 3, 4, 5, & 6 Set II.		X		Problem sets, assignments solving and discussion.	1,5	
5	9	Forecasting Forecasts computing. Forecasts evaluation. Combination of forecasts. B&D Chapter V + Lecture notes	X			Readings: Solving assigned exercises.	1,5	5
5	10	Review-Summary. Computer work: forecasting with Eviews. Forecasting with real data. Problems Set III.		X		Problem sets, assignments solving and discussion.	1,5	

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			Main	Main		DESCRIPTION	HOUR	WEEKLY WORK LOAD
6	11	Regression with autocorrelation Consequences of the presence of autocorrelated errors. Robust inference through HAC standard errors. Endogeneity problems (lagged dependent variable), Instrumental Variables solution (Two Step Least Squares). W Chapter 12.	X			Notify the small group instructor the univariate model chosen for every time series in the Project and present forecasts based on such models [Could be evaluated] Readings and problem set solving.	1,5	5
6	12	Review-Summary. Problems Set III.		X		Problem sets and assignments solving and discussion.	1,5	
7	13	Regression with autocorrelation Consequences of the presence of autocorrelated errors. Robust inference through HAC standard errors. Endogeneity problems (lagged dependent variable), Instrumental Variables solution (Two Step Least Squares). W Chapters 12 & 15.	X			Readings and problem set solving.	1,5	5
7	14	Computer Room Class: Practical analysis with all material covered already in order to complete the Empirical Project.		X		Problem sets and assignments solving and discussion.	1,5	
8	15	Dynamic Single-Equation Econometric models Distributed Lag models (DL). Short and Long run multipliers. Mean and Median lags. Partial adjustment models. Estimation and Inference with and without autocorrelated errors. S&W Chapter 13 + Lecture notes	X			Readings and problem set solving.	1,5	5

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						DESCRIPTION	HOUR	WEEKLY WORK LOAD
8	16	Review-Summary. Problems in Set IV.		X		Problem sets and assignments solving and discussion.	1,5	
9	17	Dynamic Multi-equation models VAR models, structural form, reduced form. Identifiability conditions. Granger-Causality analysis. Impulse response function (IRF). Lecture notes.	X			Readings and problem set solving	1,5	5
9	18	Review-Summary. Computer work: estimation and inference on VAR models with real data and Eviews. Causality analysis. IRF interpretation.				Notify the small group instructor the dynamic single-equation model chosen for the Project [To be evaluated] Problem sets, assignments solving and discussion.	1,5	
10	19	Dynamic Multi-equation models VAR models, structural form, reduced form. Identifiability conditions. Granger-Causality analysis. Impulse response function (IRF). Lecture notes.	X			Readings and problem set solving.	1,5	5
10	20	Computer Room class: Follow-up on the empirical project: estimation and interpretation of VAR models.		X		Problem sets, assignments solving and discussion.	1,5	
11	21	Non-stationary processes Non-stationary processes about a trend (TS) vs. integrated processes (DS). Unit root Dickey-Fuller test (DF). Permanent and transitory shocks. Forecasting with non-stationary models. Structural changes. S&W Chapter 14, W Chapter 18 + Lecture notes	X			Notify the small group instructor the VAR model chosen for the Project [Could be evaluated] Readings and problem set solving.	1,5	5

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11	22	Review-Summary. Computer work: distribution of the DF test statistic. The augmented DF test (ADF). Unit root testing in applications.		X		Problem sets and assignments solving and discussion.	1,5	
12	23	Non-stationary processes Non-stationary processes about a trend (TS) vs. integrated processes (DS). Unit root Dickey-Fuller test. Permanent and transitory shocks. Forecasting with non-stationary models. Structural changes. S&W Chapter 14, W Chapter 18 + Lecture notes	X			Readings and problem set solving.	1,5	5
12	24	Review-Summary. Computer work: structural change vs. unit roots. Testing for structural change.		X		Notify the small group instructor the unit root test results for the series in the Project [To be evaluated] Problem sets, assignments solving and discussion.	1,5	
13	25	Regression with nonstationary variables. Spurious regressions. Cointegration. Error Correction Models. Estimation and inference in two steps. S&W Chapter 14, W Chapter 18 + Lecture notes	X			Readings and problem set solving.	1,5	5
13	26	Review-Summary. Computer work: generation of spurious regressions; generation of cointegration relationships. Real data applications.		X		Problem sets and assignments solving and discussion.	1,5	
14	27	Regression with nonstationary variables. Spurious regressions. Cointegration. Error Correction Models. Estimation and inference in two steps. S&W Chapter 14, W Chapter 18 + Lecture notes	X			Readings and problem set solving.	1,5	5

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14	28	Review-Summary. Computer work: detection of spurious regressions, cointegration testing. Estimation of Error Correction Models with real data.		X		Notify the small group instructor the cointegration analysis for the series in the Project [Could be evaluated] Problem sets, assignments solving and discussion.	1,5	
SUBTOTAL								120
15		Class recovering, tutorials, hand in the empirical Project.						8
16-18		Assessment preparation and assessment					3	19
TOTAL								150