

Detailed course unit executive plan and programme					
Course unit code					
Course unit title	Time Series Analysis				
GENERAL INFORMATION					
Study programme				Year	4
Director of the course and assistant	Alen Belullo				
Course status ¹	X	Mandatory		Elective	
Credits allocated and type of lectures					
			Winter semester	Summer semester	
ECTS students workload				6	
Number of hours per semester				60	
Course objectives, teaching and learning methods and learning outcomes					
Aims: This course is designed to equip students with time-series techniques to analyze economic and financial data.					
Objectives:					
1. to give students an understanding of empirical modelling of economic and financial data using advance techniques in econometrics and time series;					
2. to develop econometric methods that are useful for prediction and forecast; and					
3. to apply econometric software packages for modelling and analysis.					
Requirements, correspondence and correlativity					
Basic in calculus is required					
Correspondence:					
1. Time series (London school of economics)					
2. Time series econometrics (UNIVERSITÄT BONN)					
Course content (list of topics)					
- Stationary stochastic processes and Integrated processes and differencing,					
- ARMA and ARIMA models,					
- Random walks, trends, and spurious regressions,					
- Unit roots in economic and financial data,					
- Seasonality, Cycles, Deterministic trend, Structural breaks					
- Vector autoregressive processes,					
- Granger causality,					
- Cointegration and VECM models					
Modes of instruction and acquiring knowledge (mark in bold)					
Lectures	Seminars and workshops		Exercises	Individual tasks	Multimedia and internet
Distance learning	Counseling		Laboratory	Tutorial	Fieldwork
Student requirements					
Students have to participate actively to the lectures and exercises.					
Assessment and evaluation of students (mark in bold)					

¹ Mark with „X“

Attendance	Class participation	Seminar paper	Experimental work																										
Written exam	Oral exam	Essay	Research																										
Project	Continuous assessment	Report	Practical work																										
Assessment breakdown within the <i>European credit transfer system</i>																													
<table><tr><td>REQUIREMENTS</td><td>HOURS (estimation)</td><td>LEARNING OUTCOMES</td><td>SHARE IN ECTS</td><td>SHARE IN GRADE</td></tr><tr><td>Class attendance and participation</td><td>60</td><td></td><td>36%</td><td>0%</td></tr><tr><td>Tests</td><td>30</td><td></td><td>18%</td><td>20%</td></tr><tr><td>Individual research and presentation</td><td>38</td><td></td><td>23%</td><td>30%</td></tr><tr><td>Written exam</td><td>40</td><td></td><td>24%</td><td>50%</td></tr></table>					REQUIREMENTS	HOURS (estimation)	LEARNING OUTCOMES	SHARE IN ECTS	SHARE IN GRADE	Class attendance and participation	60		36%	0%	Tests	30		18%	20%	Individual research and presentation	38		23%	30%	Written exam	40		24%	50%
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Individual research and presentation	38		23%	30%																									
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According to the <i>Code of evaluation</i> the final grade is obtained as follows:																													
A = 90 – 100% 5 (excellent)																													
B = 80 – 89,9% 4 (very good)																													
C = 70 – 79,9% 3 (good)																													
D = 50 – 69,9% 2 (sufficient)																													
Bibliography																													
Mandatory bibliography																													
1. Enders, W., Applied Econometric Time Series, Second edition, John Wiley and Sons, 2004																													
2. Lutkepohl, H., New Introduction to Multiple Time Series Analysis, Springer-Verlag, 2007																													
Additional bibliography																													
1. Hamilton, J.D., Time Series Analysis, Princeton, 1994																													
Additional information on the course																													