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 *European credit transfer system*

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%

According to the *Code of evaluation* 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