

<b>Course unit code</b>	
<b>Course unit title</b>	<b>Time Series Analysis</b>

GENERAL INFORMATION			
<b>Study program</b>	Graduate study program: Economics		Year 4.
<b>Director of the course and assistant</b>	Associate professor, Alen Belullo, Ph.D. E-mail: abelul@efpu.hr		
<b>Course status</b>	X	Mandatory	Elective
<b>Credits allocated and type of lectures</b>			
		Winter semester	Summer semester
<b>ECTS students workload</b>			<b>6</b>
<b>Number of hours per semester</b>			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 (RATS, CATS, STATA, Eviews) 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
- Autoregressive Conditional Heteroscedasticity and Generalized Autoregressive Conditional Heteroscedasticity,
- Vector autoregressive processes,
- Granger causality,
- Cointegration and VECM models

**Modes of instruction and acquiring knowledge (mark in bold)**

<b>Lectures</b>	Seminars and workshops	<b>Exercises</b>	Individual tasks	Multimedia and internet
Distance learning	<b>Counseling</b>	Laboratory	<b>Tutorial</b>	Fieldwork

**Student requirements**

Students have to participate actively to the lectures and exercises.

**Assessment and evaluation of students (mark in bold)**

Attendance	Class participation	Seminar paper	Experimental work
<b>Written exam</b>	<b>Oral exam</b>	Essay	<b>Research</b>
Project	Continuous assessment	Report	<b>Practical work</b>

Assessment breakdown within the *European credit transfer system*

REQUIREMENTS	HOURS (estimation)	LEARNING OUTCOMES	SHARE IN ECTS	SHARE IN GRADE
Attendance and class participation	60		5%	5%
Written test	15		30%	30%
Oral test	15		30%	30%
Exercises	15		15%	15%
Individual research	15		20%	20%

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**

Enders, W., Applied Econometric Time Series, Second edition, John Wiley and Sons, 2004  
Lutkepohl, H., New Introduction to Multiple Time Series Analysis, Springer-Verlag, 2007

**Additional bibliography**

Hamilton, J.D., Time Series Analysis, Princeton, 1994

**Additional information on the course**