

# Course Specifications

From the academic year 2017-2018 up to and including the

## Econometrics: Time Series Analysis (F000676)

Course size (nominal values; actual values may depend on programme)

Credits 6.0 Study time 180 h Contact hrs 45.0 h

Course offerings and teaching methods in academic year 2018-2019

A (semester 1)	English	group work	10.0 h
		lecture	30.0 h
		seminar: coached	5.0 h
		exercises	

Lecturers in academic year 2018-2019

Everaert, Gerdie	EB21	lecturer-in-charge
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Offered in the following programmes in 2018-2019

	crdts	offering
<a href="#">Master of Science in Business Engineering (main subject Data Analytics)</a>	6	A
<a href="#">Master of Science in Business Engineering (main subject Finance)</a>	6	A
<a href="#">Master of Science in Business Engineering (main subject Operations Management)</a>	6	A
<a href="#">Master of Science in Complementary Studies in Economics</a>	6	A
<a href="#">Master of Science in Economics</a>	6	A
<a href="#">Master of Science in Economics</a>	6	A
<a href="#">Exchange programme in Economics and Business Administration</a>	6	A

Teaching languages

English

Keywords

Time series analysis, stationarity, nonstationarity, ARMA models, VAR models, unit root tests, cointegration, panel data.

Position of the course

Broaden the student's knowledge beyond the econometric techniques introduced in the course "Econometrics" to the specific econometric properties of time series analysis and panel data models. Applying the acquired knowledge and abilities by working in small groups on a number of cases.

Contents

- 1 Univariate time series analysis (ARMA models)
- 2 Multivariate time series analyse (VAR models)
- 3 Stationarity versus nonstationarity (unit root tests)
- 4 Regression analysis using nonstationary series (cointegration analysis)
- 5 Introduction panel data

Initial competences

Final objectives from the course "econometrics".

Final competences

- 1 Thorough knowledge of the specific properties of time series and their use in regression analysis.
- 2 A basic knowledge of estimation methods for panel data.
- 3 Develop a scientifically well-founded roadmap for solving practical econometric problem using time series analysis
- 4 Independently and critically reflect on the statistical properties of the applied

- methods and techniques and translate this into the choice of an adequate method.
- 5 Implement the time series methods in econometric software
  - 6 Correctly interpret the estimation results.

#### Conditions for credit contract

Access to this course unit via a credit contract is determined after successful competences assessment

#### Conditions for exam contract

Access to this course unit via an exam contract is unrestricted

#### Teaching methods

Group work, lecture, seminar: coached exercises

#### Extra information on the teaching methods

Ex cathedra theoretical lectures.

During the group assignment and tutorials students apply the theory to real problems.

Lectures and tutorials are in English.

#### Learning materials and price

Slides (available on Minerva) and reading list.

#### References

- Enders, W., Applied Econometric Time Series (Second Edition), John Wiley & Sons, 2005
- Hamilton, JD, Time Series Analysis, Princeton University Press, 1994
- Harris, R., Cointegration Analysis in Econometric Modelling, Prentice Hall, 1995
- Lütkepohl, H. and M. Krätzig, Applied Time Series Econometrics, Cambridge University Press, 2004.
- Wooldridge, J.M., Introductory Econometrics. A Modern Approach, South-Western, 2009.

#### Course content-related study coaching

Concerning the content of the course, students can appeal to the support of the lecturer and the assistants. Study material (slides, assignments, solutions to the assignments, ...) are available on Minerva.

#### Evaluation methods

end-of-term evaluation

#### Examination methods in case of periodic evaluation during the first examination period

Written examination, oral examination

#### Examination methods in case of periodic evaluation during the second examination period

Written examination, oral examination

#### Examination methods in case of permanent evaluation

#### Possibilities of retake in case of permanent evaluation

not applicable

#### Extra information on the examination methods

Written and oral exam (with written preparation) exam during which the knowledge of the econometric techniques discussed during this course and the ability to use these techniques to analyse real problems are evaluated.

Practical assignment (in preparation of the written exam) in which the acquired knowledge is applied to real problems. The main part of the exam evaluates the correct interpretation of the student's solution (EViews output) of this case study. The solution of the case is not evaluated as such.

#### Calculation of the examination mark