GHENT UNIVERSITY

Course Specifications

From the academic year 2015-2016 up to and including the

Advanced Econometrics: Non-linear Methods (F000687)

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 2)	English	group work	10.0 h
		seminar	5.0 h
		lecture	30.0 h

Lecturers in academic year 2018-2019

Everaert, Gerdie	EB21	lecturer-in-charge
Cockx, Bart	EB21	co-lecturer

Offered in the following programmes in 2018-2019	crdts	offering
Master of Science in Business Engineering (main subject Data Analytics)	6	A
Master of Science in Business Engineering (main subject Finance)	6	A
Master of Science in Business Engineering (main subject Operations Management)	6	A
Master of Science in Economics	6	A
Master of Science in Economics	6	A
Exchange programme in Economics and Business Administration	6	A

Teaching languages

English

Keywords

Asymptotic properties of estimators, simulation methods, endogeneity, instrumental variables, generalised method of moments, panel data, non-linear estimation methods, (quasi-) maximum likelihood, discrete choice, Tobit and sample selectivity.

Position of the course

To broaden and deepen the knowledge acquired in the courses “Econometrics” and “Econometrics: Time Series Analysis”. Being able to apply the acquired knowledge and abilities by working in small groups on cases.

Contents

- The Classical Linear Regression Model in matrix notation
- Asymptotic properties of estimators
- Simulation methods (Monte Carlo and Bootstrap)
- Endogeneity, instrumental variables and the Generalised Method of Moments (GMM)
- Linear estimation methods for static and dynamic panel data models
- Non-linear estimation methods, among which (quasi-) maximum likelihood
- Discrete choice models for cross section and panel data
- Tobit models for cross sectionand panel data
- Sample selectivity corrections

Initial competences

Final objectives from the courses “Econometrics” and “Econometrics: Time Series Analysis”.

Final competences

1 Thorough knowledge of the asymptotic properties of estimators, simulation methods, instrumental variables estimators, linear and non-linear estimation methods for

cross-section and panel data.
2 Being able to use the acquired knowledge in a scientifically well-founded way to analyse real economic problems.

Conditions for credit contract

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

Conditions for exam contract

This course unit cannot be taken via an exam contract

Teaching methods

Group work, lecture, seminar

Extra information on the teaching methods

Lectures and tutorials (both in English).

Learning materials and price

Marno Verbeek, A Guide to Modern Econometrics (Second Edition), John Wiley & Sons, 2004. Cost: 50 EUR

References

- Greene, W.H., Econometric Analysis (fifth edition), Prentice Hall, 2003.
- Johnston, J. and J. Dinardo, Econometric Methods (fourth edition), McGraw-Hill, 1997.
- Verbeek, M., A Guide to Modern Econometrics (fourth edition), John Wiley & Sons, 2012.
- Wooldridge, J.M., Econometric Analysis of Cross Section and Panel Data (second edition), MIT Press, 2010.

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 and continuous assessment

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

Written examination, oral examination

Possibilities of retake in case of permanent evaluation

examination during the second examination period is possible

Extra information on the examination methods

Written and oral exam.

Calculation of the examination mark

End-of-term (50%) and permanent (50%).