

Advanced Quantitative Techniques (K001282)

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

Credits 6.0

Study time 180 h

Course offerings and teaching methods in academic year 2024-2025

A (semester 1)	English	Gent	practical lecture	0.0h
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Lecturers in academic year 2024-2025

Lievens, John

PS04

lecturer-in-charge

Van Pottelberge, Amelie

PS04

co-lecturer

Offered in the following programmes in 2024-2025

[Master of Science in Sociology](#)

crdts

offering

6

A

[Exchange Programme in Political and Social Sciences](#)

6

A

Teaching languages

English

Keywords

social statistics, applied statistics, quantitative methods, data analysis, multilevel analysis

Position of the course

Advanced Quantitative Techniques is one of the technical courses in the fixed program of the Master of Sociology.

Contents

Advanced Quantitative Techniques deals with multilevel analysis. Attention is paid to the link between analysis and sociologically relevant problems. The statistical-mathematical aspects of these method as well as its use in concrete sociological questions form part of this course. The basic random intercept multilevel model is thoroughly studied, with extension to fully random models and (cross-level) interactions, for linear and logistic regression analysis. Further, we go into more advanced variants of the multilevel model (cross-classified designs, meta-analysis, longitudinal analysis, ...).

Before the part on multilevel analysis, the content of courses on quantitative analysis from previous years is systematized and integrated on actual research and applied to a real, large-scale dataset.

Initial competences

Required

The students should have successfully taken the course 'Multivariate Analysis' (Ba3) or have gathered the competences, intended in this course, in some other way.

Final competences

- 1 Having insight in the possibilities and limitations of multilevel analysis techniques in social-scientific research.
- 2 Understand, interpret and critically evaluate reported analysis results in sociological literature.
- 3 Make a well-considered choice for a suitable analysis technique.
- 4 Articulate and substantiate the limitations of a choice for a certain analysis technique.
- 5 Soundly design and correctly perform statistical analyses on social-scientific

data.

6 Interpret and report results of statistical analyses.

7 Critically reflect upon the choice for and use of analysis techniques.

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

Lecture, Practical

Extra information on the teaching methods

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Study material

None

References

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Course content-related study coaching

- e-learning through Ufora (forums, FAQ, e-mail)

- individual guidance during fixed office hours

Assessment moments

end-of-term and continuous assessment

Examination methods in case of periodic assessment during the first examination period

Written assessment with open-ended questions

Examination methods in case of periodic assessment during the second examination period

Written assessment with open-ended questions

Examination methods in case of permanent assessment

Skills test

Possibilities of retake in case of permanent assessment

examination during the second examination period is possible

Extra information on the examination methods

1. first examination period:

Periodic evaluation: Emphasis lies on insight-focused and theoretical questions.

Non periodic evaluation: skill test with an integration of the initial required competences (datacleaning, operationalisation, univariate and bivariate descriptive and inferential statistics, various multivariate analysis techniques with assumption tests) and multilevel modelling (in MLwiN and R).

2. Second examination period

periodic evaluation: written exam with questions testing theoretical insight and skills.

Calculation of the examination mark

1. first examination period:

Combination of non periodic evaluation (skill test, 50%) and periodic evaluation (written exam, 50%). The final score is the sum of the periodic and non periodic evaluation.

Students who are legally absent on the day of the skill test must take the test at a different time. Unauthorized absence during the skills test will lead to a total score (skills test + exam) of maximum 7/20, regardless of the score on the exam.

2. second examination period:

- periodic evaluation (100%): written examination

Facilities for Working Students

1. Possible rescheduling of the examination to a different time.

2. Alternative time for feedback is possible.

