

## Quantitative Research Methods in Linguistics (A004200)

<b>Course size</b>	<i>(nominal values; actual values may depend on programme)</i>			
<b>Credits</b> 5.0	<b>Study time</b> 150 h	<b>Contact hrs</b>	45.0 h	
<b>Course offerings and teaching methods in academic year 2023-2024</b>				
B (semester 2)	Dutch	Gent	lecture seminar	

### Lecturers in academic year 2023-2024

De Cuypere, Ludovic	LW06	staff member
Leuschner, Torsten	LW06	lecturer-in-charge

### Offered in the following programmes in 2023-2024

	crdts	offering
Bachelor of Arts in Linguistics and Literature (main subject Dutch - English)	5	B
Bachelor of Arts in Linguistics and Literature (main subject Dutch - French)	5	B
Bachelor of Arts in Linguistics and Literature (main subject Dutch - German)	5	B
Bachelor of Arts in Linguistics and Literature (main subject Dutch - Greek)	5	B
Bachelor of Arts in Linguistics and Literature (main subject Dutch - Italian)	5	B
Bachelor of Arts in Linguistics and Literature (main subject Dutch - Latin)	5	B
Bachelor of Arts in Linguistics and Literature (main subject Dutch - Spanish)	5	B
Bachelor of Arts in Linguistics and Literature (main subject Dutch - Swedish)	5	B
Bachelor of Arts in Linguistics and Literature (main subject English - German)	5	B
Bachelor of Arts in Linguistics and Literature (main subject English - Greek)	5	B
Bachelor of Arts in Linguistics and Literature (main subject English - Italian)	5	B
Bachelor of Arts in Linguistics and Literature (main subject English - Latin)	5	B
Bachelor of Arts in Linguistics and Literature (main subject English - Spanish)	5	B
Bachelor of Arts in Linguistics and Literature (main subject English - Swedish)	5	B
Bachelor of Arts in Linguistics and Literature (main subject French - English)	5	B
Bachelor of Arts in Linguistics and Literature (main subject French - German)	5	B
Bachelor of Arts in Linguistics and Literature (main subject French - Greek)	5	B
Bachelor of Arts in Linguistics and Literature (main subject French - Italian)	5	B
Bachelor of Arts in Linguistics and Literature (main subject French - Latin)	5	B
Bachelor of Arts in Linguistics and Literature (main subject French - Spanish)	5	B
Bachelor of Arts in Linguistics and Literature (main subject French - Swedish)	5	B
Bachelor of Arts in Linguistics and Literature (main subject German - Greek)	5	B
Bachelor of Arts in Linguistics and Literature (main subject German - Italian)	5	B
Bachelor of Arts in Linguistics and Literature (main subject German - Spanish)	5	B
Bachelor of Arts in Linguistics and Literature (main subject German - Swedish)	5	B
Bachelor of Arts in Linguistics and Literature (main subject Latin - Greek)	5	B
Bachelor of Arts in Linguistics and Literature (main subject Latin - Italian)	5	B
Bachelor of Arts in Linguistics and Literature (main subject Latin - Spanish)	5	B
Bachelor of Arts in Linguistics and Literature (main subject Latin - Swedish)	5	B
Bachelor of Arts in East European Languages and Cultures	5	B

### Teaching languages

Dutch

## Keywords

Statistics, data-analysis

## Position of the course

This course contributes to the development of linguistic research competences of the student. The course will enable students to describe and analyze linguistic research data statistically by executing basic statistical tests. The student will also learn to critically interpret statistical analyses and results in linguistic publications.

## Contents

- Study design (randomisation, study vs. control group, corpus annotation, quantitative vs. qualitative research methods, observational vs. experimental research)
- The following types of data will be discussed: corpus data on syntactic alternations and lexical variation, phonological data, data from attitudinal research and psycholinguistic experiments, sociolinguistic data and inquiry data.
- Data annotation and simple questioning of data
- The most important theoretical partitions (normal, binomial and chi-square)
- Description of univariate and bivariate data (bar chart, histogram, boxplot, qq-plot etc.)
- Point estimator and confidence interval for population averages in normal data or big sample surveys
- Formulating zero hypothesis and alternative hypothesis
- t-test (one sample and two sample)
- Chi-square test
- Variation analysis
- Linear regression

## Initial competences

Knowledge of linguistics concepts and theories from BA1 and BA2

## Final competences

- 1 Students will be able to draw up and input data correctly in statistical software packages
- 2 To understand basic concepts and argumentation in quantitative research methodology (zero vs. alternative hypothesis, p-value, probability, stochastic dependency, measures of central tendency, operationalisation, etc)
- 3 To describe a simple dataset statistically (including graphic representation) using a software package
- 4 To execute simple statistical tests in a software package
- 5 To adopt a critical and inquisitive attitude towards research of their own and that of others.

## Conditions for credit contract

Access to this course unit via a credit contract is unrestricted: the student takes into consideration the conditions mentioned in 'Starting Competences'

## Conditions for exam contract

Access to this course unit via an exam contract is unrestricted

## Teaching methods

Lecture, seminar: practical PC room classes

## Extra information on the teaching methods

PC-exercises: data analysis in statistical software packages

## Learning materials and price

Handouts, slides, video tutorials, and software scripts will be made available through Ufora. All students need to have their own laptop computer in order to participate in the course exercises (a basic model suffices). We will use software (R and RStudio) that can be downloaded for free.

## References

- David S. Moore, George P. McCabe, Bruce Craig (2017). Introduction to the Practice of Statistics (9th ed.). New York: W.H. Freeman.
- Johnson, Keith (2008) Quantitative Methods in Linguistics. London: Blackwell.

## Course content-related study coaching

Students are supervised individually during classes. Additional tutoring by the lecturer is possible by appointment.

**Evaluation methods**

end-of-term and continuous assessment

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

Written examination with open questions

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

Written examination with open questions

**Examination methods in case of permanent evaluation**

Assignment

**Possibilities of retake in case of permanent evaluation**

examination during the second examination period is possible

**Extra information on the examination methods**

The paper is meant to demonstrate the statistical abilities of the student as well as his/her insight in statistical techniques and results. The written exam probes the interpretation of the results of statistical techniques and the critical understanding of statistical results in the linguistic publications.

**Calculation of the examination mark**

Written exam: 70% Paper: 30%

Not handing in the paper will result in an end score of 9/20, independent of the result for the written exam.

**Facilities for Working Students**

Facilities:

- 1 Possible exemption from educational activities requiring student attendance
- 2 Possible rescheduling of the examination to a different time in the same academic year
- 3 Feedback can be given by e-mail or during an appointment during office hours