

MASTER IN STATISTICAL DATA ANALYSIS (ADVANCED MASTER)

MAJORS: STATISTICAL SCIENCE • COMPUTATIONAL STATISTICS

60 ECTS CREDITS – LANGUAGE: ENGLISH – DEGREE: MASTER OF SCIENCE

COURSE CONTENT

Increasing computer power and the professional need to extract objective information from observed data have led to complex databases. Statistical science has become a broad discipline with well-developed methods and techniques for the design and analysis of a wide range of empirical studies.

Information obtained from correctly analysed data allows to predict, adjust and even optimise processes based on evidence. Inefficient or haphazard data gathering and analysis, however, can lead to inferior or misleading conclusions with possibly far-reaching consequences.

Hence, international professional and research standards in various fields demand high quality data analysis, performed by qualified statisticians. This programme offers intensive training in modern statistical methods and data analysis to scientists from a variety of fields including biology, bio-informatics, economy and marketing, environmental and life sciences, engineering, mathematics and physics, psychology and social sciences ...

The programme aims at improving problem solving skills and evidence based decision making. This will enable scientists to play a distinctly important role within their field of expertise.

COURSE STRUCTURE

The programme (60 credits) consists of mandatory general courses (12 credits), major courses (33 credits) and a master's dissertation (15 credits).

In every course, the theory is supported by projects and assignments in order to develop skills of practical data analysis. It thus provides hands-on experience with real data. The programme is taken either as a one year full-time programme or it can be spread over two or more years. Several courses are taught in the evening.

The program allows students to choose between two majors.

> Major Statistical Science

This track provides a firm basis of statistical thinking and methodology, with focus on understanding and applying statistical concepts and bridging the world of statistics with empirical sciences. From a wide variety of elective courses, taught by lectures from different fields of applications, students can compose a curriculum that fits to their background and interests. The lecturers are active researchers and they are involved in projects with industry and society. Through the elective courses students are trained in modern statistical methods with a strong emphasis on applications. Graduates from this major are all-round statisticians.

> Major Computational Statistics

With the increasing generation of complex and massive data sets, more than ever statisticians need to collaborate with data managers and computer scientists. They are expected to know the basics of databases, data management and data access. Many companies ask their statisticians to implement code for performing very specific data analysis tasks. This coding goes beyond the traditional statistical software packages such as SAS or R, and involves also other modern programming languages (e.g. Python, Perl ...).

The major Computational Statistics offers a balance between courses focusing on statistical data analysis methods and data bases and programming skills. The major is particularly intended for students with a good computer skills and with a good sense for algorithmic thinking.

During the second term the students finish the master's dissertation. The master's dissertation provides students with the unique opportunity to learn first-hand from an experienced statistician how the statistical method gets applied to solve real world problems. This is an important component of the programme. Students report on their methods and results both orally and in writing.

CAREER PERSPECTIVES

Students who successfully finish the master's programme have acquired an advanced level of statistical knowledge and data analytical skills. They are ready to contribute as independent experts to a multidisciplinary team that designs, performs, analyses and reports applied scientific research. There is a great demand in industry, banking, government, academia and research centres (both the profit as the non-profit making sector).

The masters are trained to handle practical problems in an objective scientific manner and to obtain insight in the structure of data and the underlying model. Our masters have been encouraged to think critically and be creative problem solvers. Computational skills, flexibility, efficiency and a positive attitude towards lifelong learning are important qualities and indispensable for a successful career.

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TOELATINGSVOORWAARDEN VOOR HOUDERS VAN EEN VLAAMS DIPLOMA

Na geschiktheidsonderzoek (*):

- Een diploma van een masteropleiding
opleiding(en) oude structuur:
 - de corresponderende diploma's oude structuur
- (*) Het geschiktheidsonderzoek omvat een 'assessment test' dat basis wiskunde, kansrekenen, statistiek en het gebruik van R software toetst.
Alle informatie vind je op www.mastat.ugent.be/assessmenttest/.

TAAL

Je voldoet aan de taalvoorwaarden op basis van je Vlaams diploma.

PRAKTISCHE INFORMATIE

Studieprogramma:

<https://studiegids.ugent.be>

> faculteiten > opleidingstypes > ga naar de opleiding van je keuze

Infomomenten

Masterbeurs

www.ugent.be/masterbeurs

Studiegeld

Voor master-na-masteropleidingen gelden aparte tarieven:

www.ugent.be/manamastudiegeld

Contact

Faculteit Wetenschappen
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www.mastat.ugent.be

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ADMISSION REQUIREMENTS FOR INTERNATIONAL DEGREE STUDENTS

For all students, admission is partly dependent on the result of an assessment test, which evaluates skills in basic mathematics, probability, statistics and fluency with use of the R software. The Study Programme Committee can decide that students need to follow a preparatory course.

More information can be found at
www.mastat.ugent.be/assessmenttest

LANGUAGE

More information regarding the required knowledge of English:
www.ugent.be/specificlanguag

PRACTICAL INFORMATION

Study programme

www.ugent.be/coursecatalogue

> by Faculty > Programme types > select your programme

Application deadline for international degree students

- for students who need a visa: 1st of March
- for students who do not need a visa: 1st of June

www.ugent.be/deadline

Enrolling

Ghent University

Tuition fee

More information is to be found at:
www.ugent.be/tuitionfee

Contact

Ghent University - Faculty of Sciences
Department of Applied Mathematics, Computer Science and Statistics

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