



# ***MASTER OF STATISTICS***

Biostatistics

Bioinformatics

Epidemiology and Public Health Methodology

International Course Programme Biostatistics

# MESSAGE FROM THE PROGRAMME CHAIRS

For more than two decades, our Master of Statistics allowed around 700 graduates to start a career in (biopharmaceutical) industry, in academia, and in governmental agencies. Our graduates, with origins from all over the globe, provide proof of the availability of exciting jobs for statisticians in a variety of environments.

The need for well-trained biostatisticians, bioinformaticians, and epidemiological and public-health scientists is ever increasing, enhanced by the scientific revolution in molecular biology and genetics, and its impact on health and the environment.

The Master of Statistics of Hasselt University, with specializations: Biostatistics, Bioinformatics and Epidemiology & Public Health Methodology, keep abreast with such evolutions. The master programme combines a solid study of principles of applied and biostatistics with up-to-date training in topics such as clinical trials, public health, longitudinal data, survival analysis, genetics, survey methodology... The specialization in Bioinformatics allows keeping an even closer pace with the more specific professional needs and skills required by the developments of the novel experimental techniques in molecular biology and genetics.

Not only the student population, also faculty is multidisciplinary and international. Founding Chairman and Head of the Advisory Board, Prof. Herman Callaert: "Courses are taught by specialists in the field; we are proud to have renowned

visiting faculty from abroad, teaching at Hasselt University." Indeed, while the programmes are run by Hasselt University, faculty of the Center for Statistics (CenStat) takes responsibility for a large part of the courses. Visiting faculty from other Belgian universities, from Europe, and from other parts of the world are invited on the basis of their state-of-the-art knowledge and on their excellent teaching skills. The Master of Statistics enjoys a longstanding relationship with Harvard University, as well as with other top ranking institutions. Many of our graduates continue their studies towards a Ph D, all over the world.

We welcome students with a university degree and who combine a genuine interest in an interdisciplinary training with a solid background in mathematical sciences or related fields.

We offer well-balanced, fine-tuned programmes with face-to-face lectures, assignments, practical work, and papers. Practical on-site training, in industry, academia, or the government completes every programme. We maintain a network of companies and institutions, offering our students the possibility to choose a practical project that fits them best, whether in Belgium or abroad.

If you are considering intensive training towards the modern and ever-expanding profession of statistician, we are glad to welcome you to our internationally renowned Master of Statistics.



*Prof. Geert Molenberghs  
Vice-director of CenStat  
Director of IB<sup>2</sup>  
Chair of the Biostatistics  
Programme*



*Prof. Marc Aerts  
Director of CenStat  
Chair of the Epidemiology  
and Public Health Methodology  
Programme*



*Prof. Tomasz Burzykowski  
Chair of the Bioinformatics  
Programme*

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# Hasselt

Located at the heart of the so-called Euroregion, Hasselt and its university are truly international. Hasselt is situated at a stone's throw from cities such as Brussels, Liege (French speaking part of Belgium), Aachen (Germany) & Maastricht (the Netherlands), while Paris and London are all within a couple of hundred kilometres.

Hasselt University is situated on the Diepenbeek Campus, which occupies an attractive 150 acre site in the middle of Limburg's green belt. It is two kilometres west of the town centre of Diepenbeek, a residential town of nearly 17 500 inhabitants, and four kilometres east of Hasselt, which has a population of almost 70 000 and is the administrative and commercial centre of the province. Hasselt is a dynamic student town where young people feel comfortable. The town organises all kinds of theatrical performances, music and pop festivals, either in the open air or in the well-known Ethias Arena. In addition, there is a very large movie theatre near campus. It is noteworthy that all public transport from campus to the town centre is completely free of charge for students, staff members and guests. To taste Hasselt you can visit the Jenever (Gin) Museum as well as the many cosy restaurants and cafés dotted all over the town. You can visit St. Quentin's Cathedral, the prestigious Fashion Museum, the Municipal Museum and the Virga Jesse Basilica, the beautiful Japanese Garden and the many green oases adorning the town. Hasselt is not only the capital of taste but also of the true "bon viveur"!

# Hasselt University

Hasselt University is an independent, regional, public university. Its leading principles are academic freedom, ideological openness, priority to scientific ethics in a spirit of positive appreciation of the different ideological convictions and an international orientation.

Founded in 1971, Hasselt University is the youngest university in Belgium, but it has already achieved a reputation for excellence in academic programmes, learning methods and research.

Hasselt University stands out by its emphasis on an innovative approach of university education. The university is renowned for its specific educational methodology and for its contributions to the innovation of university education in Flanders. Both in teaching and in research the focus on international aspects is considered a priority.

Moreover, Hasselt University offers an excellent and fully flexible education which relies on carefully planned degree programmes, as well as on tutoring. Teaching is organized through a combination of lectures, compulsory reading, laboratories, group projects and participation in ongoing research and consulting. You and your fellow students have to work together and you are held accountable for your progress, although the staff will always be pleased to help students. We consider active studying the most effective way of studying. Furthermore a lot of attention is devoted to the master project, including the individual thesis project.

The successful student is trained, not only in course related knowledge and skills, but also in working within an interdisciplinary environment, for which communication skills are imperative. We aim at self-assured, independent and assertive professionals for whom analyzing issues, structuring information, working in international and multidisciplinary teams, entering into and chairing discussions and presenting ideas have become their second nature.

Hasselt University focuses its research on well-chosen spearhead fields. Research and education are closely linked: bachelor and master students participate in the university's research programmes from an early stage on. Master programmes are entirely based on the scientific spearhead fields of the university.





# Center for Statistics (CenStat)

## *CenStat encompasses mathematical statistics, biostatistics, statistical bioinformatics, epidemiology, and public health.*

In the field of mathematical statistics, research is carried out in the following fields: bootstrap methods, smoothing techniques, censored data, asymptotic theory. Research in applied statistics focuses on longitudinal data analysis, clustered data, missing data, multivariate methods, clinical trials, epidemiological studies. The fundamental research in mathematical and applied statistics is the cornerstone of a sound analysis of real-world problems, originating from a variety of fields. Examples are: registration and analysis of data from psychiatry, public health surveys, clinical trials (cancer, AIDS, hypertension, ...), epidemiological research, risk factors related to exposition to toxic substances and environment.

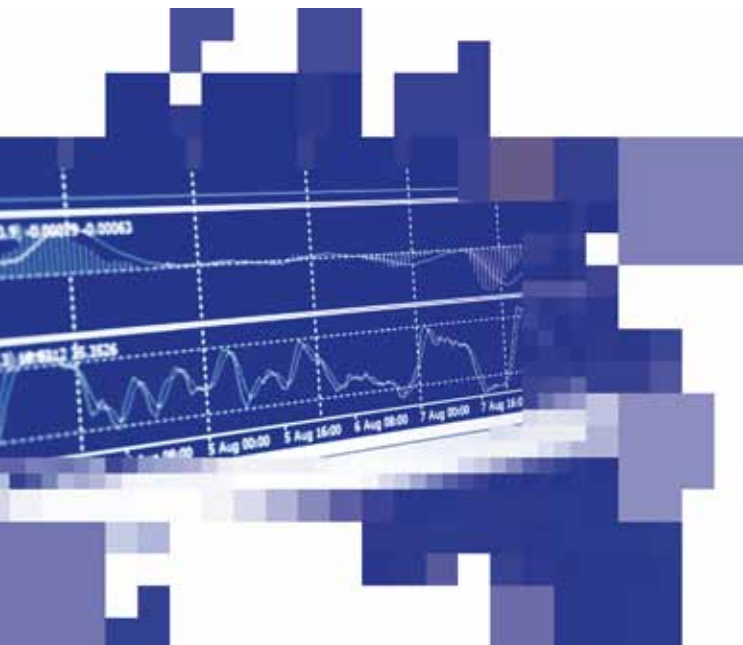
CenStat provides statistical consulting for local, regional and federal government authorities, for the pharmaceutical industry and other industrial partners, for research teams from medicine, biology, chemistry, economy.

Education is a priority. Our master programme is entirely based on the scientific spearhead fields of the Center. Not surprisingly, the master programme in Biostatistics, Bioinformatics and Epidemiology & Public Health Methodology, occupies a very prominent role in the life and activities of CenStat. CenStat staff is also involved in bachelor- and master programmes in mathematics, statistics, medicine, biomedical sciences, and applied economic sciences.

CenStat members are frequently invited to figure as guest lecturer in courses of other universities and in short university courses. Industry and governmental agencies frequently call upon CenStat for their statistical permanent training course. Apart from biostatistical, environmental, and epidemiological collaborative research, CenStat is active in partnerships regarding bioinformatics, registration projects, the census, and survey methodology.

This educational link between CenStat and the industry, research institutes, and the government extends over a wide variety of consultancy and collaborative research relationships.

The broad network of contacts with external partners is a major source, year after year, for thesis projects, which are an integral requirement for our master level.



# A word from the Advisory Board

Over the past three decades, the need for well-trained statisticians has steadily increased and exceeded the available supply at both the master and doctoral levels. Also in the new millennium, the rapid growth of biomedical research re-tells that the role of statistics and the need for statisticians will continue to grow.

The Master of Statistics programmes of Hasselt University provide an excellent opportunity for training in modern methods of statistics and their applications. The course work is comprehensive and includes evolving subject areas such as analysis of failure time and longitudinal data. The use of visiting faculty complements the staff based at Hasselt University, and provides diverse views and opportunities for training in new developments. The picturesque environment in Flanders is further enhanced by the student body, which comes from all parts of the world and makes the environment at Hasselt University both stimulating and interesting.



*Founding Chairman  
Head of the Advisory Board  
Professor Herman Callaert*

A handwritten signature in black ink, appearing to read 'H. Callaert', with a long horizontal line underneath.

*Professor  
Sir David R. Cox*

A handwritten signature in black ink, appearing to read 'David Cox'.

*Professor  
Stephen W. Lagakos (+ 2009)*

A handwritten signature in black ink, appearing to read 'S. W. Lagakos'.

## Professor Stephen W. Lagakos Course in Survival Analysis

Professor Stephen W. Lagakos, former Chair of the Harvard Department of Biostatistics and of this department's large and tremendously successful AIDS Clinical Trials Center, was an Advisory Board member since the inception of our Master of Science in Biostatistics Programme. Professor Lagakos, together with Professor Sir David Cox, helped shape the programme from that time, all the way to its current successful format.

In 2009, Professor Lagakos tragically passed away, leaving his family, department, his professional community, and many friends and colleagues devastated.

To befittingly commemorate his many contributions and amicable personality, and to underscore the instrumental role he has held in building our Master in Statistics pro-

gramme, the Course in Survival Analysis, formerly known as the Janssen Pharmaceutica Survival Analysis Chair, will be named after him, to pay tribute to Professor Lagakos' many contribution to the field of statistics, in terms of research, education, administration, and organization.

Former recipients of the Chair were: David Harrington, Harvard University (1999), Michael Jones, University of Iowa (2000), Paul Catalano, Harvard University (2001), Ingrid Van Keilegom, Université Catholique de Louvain (2002, 2008, 2009), Yi Li, Harvard University (2003), Steve Lagakos, Harvard University (2004), Joseph Ibrahim, University of North Carolina (2005), Yi Li, Harvard University (2006), Florin Vaida, University of California (2007). In 2010, the course will be taught by Cathérine Legrand, from the Université Catholique de Louvain.



# Master of Statistics



## *A two year master programme – 120 ECTS credits*

The specializations offered are: Biostatistics, Bioinformatics, Epidemiology & Public Health Methodology, ICP Biostatistics. Students are free to combine subjects from different specializations to create their own profile. Most courses of one specialization are optional for another specialization. All courses are taught in English.

Depending on the background and individual interests, students may elect to deviate from the standard programmes, even in terms of the compulsory subjects. Subjects are optional, projects are not.

Students can also select optional subjects from the subject list of the Master of Statistics of K.U. Leuven.

Students with a master degree in e.g. mathematics, statistics, and/or computer sciences can apply and reduce their programme substantially (e.g. to a one year programme).

A request for an individualized programme and an application for exemptions has to be formally submitted to the Examination Board, along with a clear motivation and justified by the requested documents.

To accommodate students combining study and a professional career, the programme can be followed in a part-time way. In the latter case, the individually tailored programme, including a proposal of the chronological order in which subjects will be taken, has to be formally submitted to the Examination Board.

Hasselt University and CenStat collaborate intensively with the University Centre for Statistics of the Katholieke Universiteit Leuven and their Master of Statistics. This opens opportunities for exchange at the level of teaching faculty and students. Both universities jointly founded the International Institute for Biostatistics and statistical Bioinformatics (I-BioStat).

### **Educational concept**

Teaching is organized through a combination of lectures, compulsory reading, laboratories, group projects and participation in ongoing research and consulting. Students work together and are held accountable for their progress, although staff will always be pleased to provide help. We consider active studying extremely effective. Furthermore a lot of attention is devoted to the master project, including the individual thesis project.

The successful student is trained, not only in statistical knowledge and skills, but also in working within an interdisciplinary environment, for which communication skills are imperative. We aim at self-assured, independent and assertive professionals for whom analysing an issue, structuring information, working in international and multidisciplinary teams, conducting and chairing discussions and presenting ideas have become second nature.

### **Academic calendar**

The academic year is divided into two semesters. Each semester is concluded with an assessment to verify that you have attained the required level of knowledge. This assessment can be based on an examination, an essay, a project, a presentation or a skills test.

In the first year of the master programme, the introductory phase is almost the same for every student.

[www.uhasselt.be/academic-calendars](http://www.uhasselt.be/academic-calendars)

# Specializations

## *Biostatistics/ ICP Biostatistics*

In the specialization Biostatistics/Biostatistics ICP sound training in modern statistical methodology, necessary for the design and analysis of biomedical and epidemiological studies, is provided. Core biostatistics courses are Longitudinal Data Analysis, Survival Analysis, and Clinical Trials. Furthermore the specialization in Biostatistics is strongly research oriented.

The study programme of students from developing countries, with a scholarship sponsored by the University Development Cooperation Section of the Flemish Interuniversity Council (VLIRUOS), is adapted to their specific needs and interests in the specialization Biostatistics ICP.

Scholarship for the ICP Biostatistics of the Flemish Interuniversity council (VLIR-UOS). Candidates must not be older than 35 year. Their fully completed application form and requested documents should be returned to the VLIR administration in Brussels no later than the 1st of February. Candidates will be notified by VLIR-UOS after the meeting of the Selection Committee (May-June). More detailed information on requirements and application forms are available from: [www.uhasselt.be/master-of-statistics](http://www.uhasselt.be/master-of-statistics).

## *Bioinformatics*

The rapid evolution in scientific research in genomics and proteomics continuously requires new knowledge and skills. Besides a working knowledge of molecular biology, there is the need for specialized knowledge of, and applied skills in database management, computer programming, statistical techniques and knowledge discovery & integration.

The Master of Statistics: Bioinformatics prepares graduates in such a way that they:

- are able to design and analyze experiments aimed at obtaining genomic and proteomic data
- possess the necessary knowledge and skills to develop, understand and create bioinformatics software tools and databases
- become self-assured, independent and assertive professionals for whom analyzing an issue, structuring information, working in international and multidisciplinary teams, conducting and chairing discussions and presenting ideas have become second nature.

## *Epidemiology & Public Health Methodology*

The specialization Epidemiology & Public Health Methodology offers a professionally-oriented programme with emphasis on epidemiology, modeling of infectious diseases and microbial risk assessment.



# Study programme

## Studieprogramme



### 1

#### First year

### BIOSTATISTICS

OPLEIDINGSONDERDELEN	studiepunten
Semester 1	
Concepts of probability and statistics	5
Regression	5
Analysis of variance	5
Data management in statistics	5
Optional subject	3
Learning from data (group project)	7
Assessment	
<b>Total ECTS</b>	<b>30</b>
Semester 2	
Non-parametric methods	4
Correlated and multivariate data	4
Discrete data analysis	4
Concepts of Bayesian inference	3
<a href="#">Disease mapping</a>	5
Optional subject	3
Discovering associations (group project)	7
Assessment	
<b>Total ECTS</b>	<b>30</b>

### 2

#### Second year

OPLEIDINGSONDERDELEN	studiepunten
Semester 1	
Multivariate data analysis, (group project) (*)	3
Medical biology	3
Epidemiology (group project) (*)	3
Applied data modelling	4
<a href="#">Principles of statistical inference</a>	3
<a href="#">Foundations of linear models</a>	3
Genetic epidemiology	3
<a href="#">Survival analysis</a>	4
Assessment	
<b>Total ECTS</b>	<b>26</b>
Semester 2	
Bayesian data analysis	3
Longitudinal data analysis	3
Longitudinal data analysis - project (*)	3
Advanced modelling techniques (*)	3
Clinical trials	5
Advanced topics in clinical trials	3
Thesis project (individual project) (*)	14
Assessment	
<b>Total ECTS</b>	<b>34</b>

Information about the course content:

[www.uhasselt.be/studyguide](http://www.uhasselt.be/studyguide)

(\*) projects contributing to the master programme  
Specific to one programme

## BIOSTATISTICS ICP

OPLEIDINGSONDERDELEN	studie-punten
Semester 1	
Concepts of probability and statistics	5
Regression	5
Analysis of variance	5
Data management in statistics	5
Optional subject	3
Learning from data (group project)	7
Assessment	
<b>Total ECTS</b>	<b>30</b>
Semester 2	
Non-parametric methods	4
Correlated and multivariate data	4
Discrete data analysis	4
Concepts of Bayesian inference	3
Topics in biometry	5
Optional subject	3
Discovering associations (group project)	7
Assessment	
<b>Total ECTS</b>	<b>30</b>

## BIOINFORMATICS

OPLEIDINGSONDERDELEN	studie-punten
Semester 1	
Concepts of probability and statistics	5
Regression	5
Analysis of variance	5
Molecular biology	3
Computer programming	4
Learning from data (group project)	7
Assessment	
<b>Total ECTS</b>	<b>29</b>
Semester 2	
Non-parametric methods	4
Correlated and multivariate data	4
Discrete data analysis	4
Concepts of Bayesian inference	3
Database management	3
Basic bioinformatics (individual project)	6
Discovering associations (group project)	7
Assessment	
<b>Total ECTS</b>	<b>31</b>

## EPIDEMIOLOGY & PUBLIC HEALTH METHODOLOGY

OPLEIDINGSONDERDELEN	studie-punten
Semester 1	
Concepts of probability and statistics	5
Regression	5
Analysis of variance	5
Data management in statistics	5
Optional subject	3
Learning from data (group project)	7
Assessment	
<b>Total ECTS</b>	<b>30</b>
Semester 2	
Non-parametric methods	4
Correlated and multivariate data	4
Discrete data analysis	4
Concepts of Bayesian inference	3
Survey methods	5
Optional subject	3
Discovering associations (group project)	7
Assessment	
<b>Total ECTS</b>	<b>30</b>

OPLEIDINGSONDERDELEN	studie-punten
Semester 1	
Multivariate data analysis, (group project) (*)	3
Medical biology	3
Epidemiology (group project) (*)	3
Applied data modelling	4
Principles of statistical inference	3
Foundations of linear models	3
Optional subject	3
Survival analysis	4
Assessment	
<b>Total ECTS</b>	<b>26</b>
Semester 2	
Bayesian data analysis	3
Longitudinal data analysis	3
Longitudinal data analysis - project (*)	3
Advanced modelling techniques (*)	3
Optional subject	3
Clinical trials	5
Thesis project (individual project) (*)	14
Assessment	
<b>Total ECTS</b>	<b>34</b>

OPLEIDINGSONDERDELEN	studie-punten
Semester 1	
Multivariate data analysis, (group project) (*)	3
Medical biology	3
Computer intensive methods	3
Analysis of gene expression (individual project)(*)	7
Advanced programming (individual project)(*)	5
Data mining for bioinformatics	3
Genetic epidemiology	3
Assessment	
<b>Total ECTS</b>	<b>27</b>
Semester 2	
Computational biology	5
Computer intensive methods for bioinformatics	4
Analysis of protein expression	4
Optional subject	3
Optional subject	3
Thesis project (individual project) (*)	14
Assessment	
<b>Total ECTS</b>	<b>33</b>

OPLEIDINGSONDERDELEN	studie-punten
Semester 1	
Multivariate data analysis, (group project) (*)	3
Medical biology	3
Epidemiology (group project) (*)	3
Applied data modelling	4
Microbial risk assessment	3
Incomplete data (group project)(*)	6
Optional subject	3
Assessment	
<b>Total ECTS</b>	<b>25</b>
Semester 2	
Bayesian data analysis	3
Data mining	3
Modelling infectious diseases	4
Topics in epidemiology	3
Environmental epidemiology	3
Disease mapping	5
Thesis project (individual project) (*)	14
Assessment	
<b>Total ECTS</b>	<b>35</b>

## First year

The introductory phase provides thorough fundamental knowledge of statistics. Students will become familiar with data, statistical analysis, and, first and foremost, statistical concepts and reasoning.

Apart from topic related subjects, such as regression and analysis of variance, a lot of attention is devoted to group based project work.

In the first semester students of Epidemiology & Public Health Methodology and Biostatistics have 4 compulsory subjects, a group project and one optional subject.

The students of Bioinformatics have 5 compulsory subjects and a group project; these students are also offered two compulsory subjects which are specific to the specialization in Bioinformatics.

In the second semester the focus shifts from univariate models for continuous data to discrete data models and non-parametric approaches, as well as to correlated responses, combined with the discovery of associations. Within the second semester three subjects and a group project are common to all the specializations. Additionally, students of Biostatistics, Bioinformatics and Epidemiology & Public Health Methodology are offered a compulsory subject specific for the specialization and an optional subject. Students of Bioinformatics are offered two compulsory subjects which are specific for the specialization of Bioinformatics.

## Second year

The second year offers more specialized subjects, within each specialization.

Contributing components to the master project are four group projects (3+3+3+3 ECTS) and the individual thesis project (14 ECTS). This thesis project is linked with an internship, scheduled in the second semester (July-August).

Contributing to the master project of Bioinformatics are two individual projects (5+7 ECTS) and the individual thesis project (14 ECTS). This thesis project is linked with an internship, scheduled in the second semester (July-August).

The university decree for Flanders is built around a credit point system that is based on the principles of ECTS. ECTS is the European Credit Transfer System. Each year of a full-time degree programme does count 60 credits. Ideally, these credits are equally spread over two semesters, i.e. 30 credits per semester. Given that the expected total study load per year ranges from 1,500 to 1,800 hours for a full-time programme, 1 credit represents a study load of 25 to 30 hours. Study load includes time spent in class, personal work and exams. Conversion: USA-Canada: 1 credit hour = 2 ECTS credits; UK: 1 CATS credit = 0.5 ECTS credits.



# Alumni

## Career prospects

### Biostatistics

#### Biostatistics ICP

#### Epidemiology & Public Health Methodology

Over the years graduates in biostatistics and epidemiology & public health methodology have found positions in:

- biomedical research institutes
- pharmaceutical industry
- government
- healthcare
- academia (Ph D)
- ...

“This specialization at Hasselt University enables one to have the confidence in dealing with real life statistical problems. The courses are designed so that students will have the chance to work in groups, which makes the atmosphere more friendly and easy to cope with, and learn from one another. There is a wonderful computational facility with up to date statistical software packages. The teaching staff is so friendly that makes one feel at ease and has the opportunity to be taught by some of the best professors of statistics in the world. With the completion of the Master in Statistics, many of my friends and me have continued our studies to a Ph D level in different universities. I greatly recommend students to join this programme and explore the world of statistics at its best.”

*Abel Tilahun, Ethiopia*  
*Biostatistics*

“Hasselt University had been one of the best things ever happening in my life. The university boasts of excellent and hard working lecturers who usually went far beyond what was required of them. The Master of Statistics is extremely rich in content. The classes are reasonably small to allow for high level interaction between students and lecturers. The teaching and non-teaching staffs are warm, cordial and awesome. Furthermore, the programme ensures that one is guaranteed a promising and successful career in the future.”

*Samuel Iddi, Ghana*  
*Biostatistics*

### Bioinformatics

Over the years graduates in bioinformatics have found positions in:

- biomedical research institutes
- biotech & pharma industry
- academia (Ph D)
- ...

“Bioinformatics was my eminent choice. Research areas like analysis of protein and gene expression together with advanced programming courses have driven my decision. The content of our courses was always rich and the experience we got through practice was huge. Bioinformatics has changed my professional life. I started as a pure mathematician. However, as soon as I discovered the application areas of the methods I switched to applied mathematics. A strength of this specialization is the combination of computer science and statistics. Another asset is the combination of individual and group work. It really was a challenge. Now, thanks to my master degree I can continue as a doctorate student within the I-Biostat group.”

*Tatsiana Khamiakova, Belarus*  
*Bioinformatics*



# STATCOM

## Students helping students to help communities

StatCom Hasselt is a student-run organisation within CenStat. Students of the Master of Statistics offer statistical consulting to local non-profit organizations.

StatCom Hasselt is a member of the international StatCom Network ([www.amstat.org/education/statcom/contact.html](http://www.amstat.org/education/statcom/contact.html)), an initiative founded in 2001 by Statisticians in the Community in Purdue University. It is strongly supported and promoted by the American Statistical Association.

StatCom Hasselt joined the network in 2007 and is the only

European member. The objective of the StatCom Network is applying statistical methods and principles so as to have a positive impact on communities and institutions serving these communities, as well as to increase communication and collaboration among student statisticians engaged in service-oriented statistics. Within StatCom Hasselt, a selected group of Master of Statistics students volunteer to provide free statistical consulting to non CenStat students in other educational programmes, as well as PH D students in other master programmes, including but not limited to biology, chemistry, life sciences and medicine.



# JOSS

## Joint Organization of Statistics Scholars

*Imagine having to move to a new city in a foreign country. Imagine having to adapt to a completely different lifestyle: unusual temperatures, foreign environment, different people, strange food...*

This is one of the reasons why on June 28th 1991 a group of enthusiastic biostatisticians, decided to found Alumni Biostatistics Diepenbeek (ABD) with Kristel Luijters as the first president. With the implementation of the Bioinformatics and Epidemiology & Public Health Methodology trajectories, the alumni organization's name changed into JOSS (Joint Organization of Statistics Scholars).

With a group of energetic board members, we try to facilitate living in a completely different environment, what Belgium for sure is for a lot of our foreign students. We also try to keep contact with the graduated students as well as with the

current students and with their instructors.

Everyone is kept up-to-date through regular issues of the JOSS newsletter, with announcements about social activities, statistical meetings, as well as with personal matters. Every academic year starts with an introduction day for the VLIR and other foreign students. During this day, we help each other to understand the many cultural differences and we make a tour through Diepenbeek, the town where most of our students from abroad will spend at least one year of their life (see picture). Other activities include ice-skating, a new and exciting experience for many, soccer games, swimming, visits to the Midwinter event in Bokrijk, to cultural exhibitions,

city trips, and so on. Twice a year, we gather as many of our members as possible, once during the Christmas period with our Christmas party and once at the end of the academic year with the General Assembly, followed by our yearly barbecue.

The main goal of JOSS during all of these activities is to create a relaxed and pleasant atmosphere in which it is possible to meet friends and to exchange personal experiences.

The Master of Statistics with the specializations in Biostatistics, Bioinformatics and Epidemiology & Public Health Methodology, is a degree that can proudly figure on your curriculum vitae. It is our duty to ensure that working very hard and gaining a lot of useful knowledge will not be the only memories students will have after your stay at Hasselt University.

## Admission requirements

Hasselt University applies the same policy to its international students as for its Belgian students, though there are some additional requirements. Hasselt University will assess students individually on the basis of their previous academic record and qualifications. General requirements concern diploma requirements and language requirements.

### Diploma requirements

Students should hold at least a university diploma or degree certificate or a diploma of higher education equivalent to a bachelor degree (180 ECTS credit points). Admission can be given directly, conditionally or indirectly after finalization of a preparatory programme.

- Holders of an academic bachelor obtained from a Belgian university, in mathematics, physics, computer sciences, chemistry, biology, life sciences, bio-, business-, civil engineering.
- Applications of holders of a bachelor degree in mathematics, physics, computer sciences, chemistry, biology, life sciences, bio-, business-, civil engineering, medicine, sociology, psychology, artificial intelligence, biotechnology with a basic but sufficiently strong background in mathematics and statistics from other universities will be evaluated individually by the Examination Board of the programme concerning the applicant's academic record. Depending on the diploma you obtained previously, you may have to do a preparatory programme.

### Language requirements

Candidates who wish to register in an English-language Master's programme will need to demonstrate good command of English, both written and spoken. English-language skills need to be confirmed, by a recent score on the Test of English as Foreign Language (TOEFL) or the International English Language Testing Systems (IELTS) or any recogni-

zed proficiency test.

- a TOEFL-score report (paper based: score 550 or more, computer based: score 213 or more, internet base: score 79-80).
- IELTS-certificate (overall band score 6.0).

The English Language Test can be waived on the basis of an interview or if English-language proficiency is otherwise proven (e.g. if education or part of it was in English).

### How to enrol?

On-line pre-registration is compulsory. The Examination Board will only consider duly completed application files.

The application file consists of the following items:

- 1 duly completed application form:  
<http://www.uhasselt.be/applicationForm>
- 2 a photocopy of the obtained diplomas or degree certificates in the original language
- 3 a recent passport photograph
- 4 translation of university diploma(s) in English by an official translator
- 5 certified translated transcripts of records in the original language, for all programmes completed at university level. The university of origin should provide the transcript of records and a statement in English in which is explained how the assessment marks assigned are to be converted into the standardized US-system or EU-standard ECTS-system.

The translation of the transcript of records in English must be made by an official translator.

6 English-language skills need to be confirmed ( see language requirements)

7 APS-certificate: from the academic year 2007-2008 onwards all students from the P.R. China will have to obtain a certificate of academic screening issued by the Academic Evaluation Centre (APS) of the German Embassy in Beijing before being allowed to enrol at any higher education institution, language course or other preparatory course in Flanders. The APS certificate is also required for obtaining a student visa to Belgium. More information on APS can be found at their website [www.aps.org.cn](http://www.aps.org.cn).

From the academic year 2009-2010 on the cost of the APS-screening will be refunded to all Chinese students enrolled at Hasselt University.

### Deadline for submission 2010-2011

EEA-students	Non-EEA-students
15th of September 2010	1st of February 2010

Applicants will be notified of the Examination Board's decision as soon as possible. Applicants, who are admitted to the programme, will be asked to confirm their application and to pay the tuition fee.

### Tuition Fees

Master of Statistics: €1672

Reduced registration fees are possible for students:

- for specific social reasons
- from some developing countries within the framework of a cooperation between universities or other institutions.

### Health insurance

Covering the full period of stay in Belgium, starting on the day of arrival, health insurance is compulsory for all non-EEA-students. The premium amounts to €30/month or €360 for 12 months. The premium for health insurance must be paid together with the tuition fee.

### Payment

Applicants, who are admitted to the programme by the Examination Board, will be asked to confirm their application and to pay the tuition fee. Registration of international students is only possible after payment of the tuition fee, augmented with the premium for health insurance (only for non-EEA-students). Payment in cash or by credit card is not possible. As long as a student has not paid all outstanding registration fees the registration is suspended.

### Living expenses

The following are the approximate costs per annum (10 months) at Hasselt University. These amounts do not include travel expenses, nor expenses of (touristic) trips in Belgium and surrounding countries.

Cost type	costs in euro
Accommodation	€2 000 to €3 500
Catering	€2 000 to €2 500
Local Transport (Hasselt-area)	For free, once you have a Student ID-card
Leisure Time	€600
Textbooks etc.	€600
Other expenses	€500
TOTAL	€5 700 up to €7 700



# Faculty

## Faculty

### Chairman of Biostatistic

Professor Geert Molenberghs

### Chairman of Bioinformatics

Professor Tomasz Burzykowski

### Chairman of Epidemiology & Public Health Methodology

Professor Marc Aerts

### Coordinator VLIR International Course Programme in Biostatistics

Professor Paul Janssen

### Full time teaching staff based at Hasselt University

M. Aerts, A. Alonso, G. J. Bex, R. Braekers, T. Burzykowski, H. Callaert, J. Cortiñas, C. Faes, H. Geys, N. Hens, I. Jansen, P. Janssen, B. Kuijpers, G. Molenberghs, T. Nawrot, Z. Shkedy, V. Somers, H. Thijs, J. Van den Bussche, E. Van Kerkhove, N. Veraverbeke

### Belgian Visiting Faculty

- M. Buyse, International Drug Development Institute, Brussels
- L. Duchateau, Universiteit Gent
- E. Lesaffre, Katholieke Universiteit Leuven
- C. Legrand, Université Catholique de Louvain, Belgium
- G. Verbeke, Katholieke Universiteit Leuven
- J. Weyler, Universiteit Antwerpen

### International Visiting Faculty

- R. Nguti, ILRI, Nairobi, Kenya
- J. Houwing-Duistermaat, Leiden University Medical Centre, The Netherlands

## Advisory Board

- H. Callaert, Universiteit Hasselt, Belgium
- Sir David R. Cox, Oxford University, U.K.
- S.W. Lagakos (+2009), Harvard University, U.S.A.

## Former visiting faculty

- A. Agresti: University of Florida, Gainesville, U.S.A.
- D. Amaratunga: Johnson&Johnson, Raritan, New Jersey, U.S.A.
- A. Azzalini: University of Padua, Italy
- W. Barlow: University of Washington, Seattle, U.S.A.
- M. Becker: University of Michigan, Ann Arbor, U.S.A.
- P. Catalano: Dana-Farber Cancer Institute, Boston, U.S.A.
- R. Chappell: University of Wisconsin, Madison, U.S.A.
- D. Clayton: MRC Biostatistics Unit, Cambridge, U.K.
- P. Diggle: Lancaster University, Lancaster, U.K.

- R. Doornbos: Technical University Eindhoven, The Netherlands
- P. Embrechts: E.T.H. Zürich, Switzerland
- T.R. Fleming: University of Washington, Seattle, U.S.A.
- W. Härdle: Humboldt-Universität zu Berlin, Germany
- D.P. Harrington: Harvard University, Boston, U.S.A.
- J.D. Hart: Texas A & M University, Texas, U.S.A.
- A.M. Herzberg: Imperial College, London, U.K.
- M. Hills: London School of Hygiene and Tropical Medicine, U.K.
- Y. Hochberg: Tel-Aviv University, Tel-Aviv, Israel
- J. Ibrahim: University of North Carolina, U.S.A.
- M. Jones: University of Iowa, Iowa, U.S.A.
- T. Koepsell: University of Washington, Seattle, U.S.A.
- C. Lange, Harvard School of Public Health, Boston, U.S.A.
- N. Lange: Brown University, Providence, U.S.A.
- M. Lefkopoulou (†): Harvard University, Boston, U.S.A.
- Y. Li: Harvard University, Boston, USA
- D. Lin: University of Washington, Seattle, U.S.A.
- S. Lipsitz: Harvard University, Boston, U.S.A.
- P. Markel: Minot State University, Minot, U.S.A.
- M. Mouchart: Université Catholique de Louvain
- M. Nabasiye: National Agricultural Research Institute, Kampala, Uganda
- D. Neuberg: Harvard University, Boston, U.S.A.
- P. Njuho, University of Kwazulu-Natal, South Africa
- S. Nokoe: University of Agriculture, Abeokuta, Nigeria
- T. O'Brien: Loyola University Chicago, Chicago, USA
- J. Orav: Harvard University, Boston, U.S.A.
- L. Palmer: University of Western Australia, Perth, Australia
- K. Propert: Harvard University, Boston, U.S.A.
- L. Ryan: Harvard University Boston, U.S.A.
- E. Schifflers: Facultés Universitaires Notre Dame de la Paix, Namur
- E.J. Snell: Imperial College, London, U.K.
- J. Swanepoel: Potchefstroom University, South Africa
- A.A. Tsiatis: Harvard University, Boston, U.S.A.
- P. van der Heijden: Utrecht University, The Netherlands
- P. van der Laan: Technical University Eindhoven, The Netherlands
- I. Van Keilegom: Université Catholique de Louvain, Belgium
- M. Vuylsteke: Katholieke Universiteit Leuven
- C. van Duijn: Erasmus Universiteit Rotterdam, The Netherlands
- L.J. Wei: Harvard University, Boston, U.S.A.



## *International office*

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