UCLouvain

BSTA2M

*2025 - 2026*

# Master [120] in Statistics: Biostatistics

*The version you're consulting is not definitive. This programme still may change. The final version will be published on 1th June.*

**At Louvain-la-Neuve - 120 credits - 2 years - Day schedule - In French**
Dissertation/Graduation Project : **YES** - Internship : **optional**
Activities in English: **YES** - Activities in other languages : **NO**
Activities on other sites : **YES**
Main study domain : **Sciences**
Organized by: **Faculty of Science (SC)**
Programme acronym: **BSTA2M** - Francophone Certification Framework: 7

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# BSTA2M - Introduction

## Introduction

### Introduction

Organized by Louvain School of Statistics, Biostatistics and Actuarial Sciences (LSBA), this Master's program offers you

- A training in the fundamental concepts of statistics, using the main technical tools and software for the analysis of statistical data and the specific statistical methods required in the field of statistics in health sciences.
- A training in applied statistics to the medical field, in clinical and pre-clinical research, pharmaceutical research, epidemiology and other life sciences oriented fields.
- Several opportunities to put in practice statistical techniques based on exercises, individual projects, analyses of real data using statistical software and the preparation of a Master's thesis, possibly in collaboration with an external industry partner.

### Your profile

You

- Hold an undergraduate diploma and you wish to become a specialist in data analysis methods or to develop new innovative tools in this field;
- Hold an undergraduate diploma or Master's degree from a University or a University college and statistics is an additional competence to your actual training;
- Are looking for a training in statistics applied to the medical fields, and in particular to clinical and pre-clinical research, pharmaceutical research, epidemiology, public health or in another field of life sciences.

### Your programme

The program of Master's degree in Statistics with the Biostatistics orientation is composed of a core study program of at least 69 credits of courses (UE) of general statistic and biostatistic, and of 30 credits (including the Master's thesis) of professional focus (*finalité spécialisée*). You will complete your programs with courses from the two options of the programs (Biostatistique clinique et épidémiologie ou Biométrie, technométrie et bioonformatique) as well as by other appropriate courses from other programs (upon acceptance by the jury).

# BSTA2M - Teaching profile

## Learning outcomes

On successful completion of this programme, each student is able to :

1.

1.1

Maîtriser les calculs mathématiques fondamentaux.

1.2

Résumer un texte de méthodologie statistique et situer les limites de ses connaissances face à un problème donné.

1.3

Utiliser les outils fondamentaux de calcul et de programmation dans des problèmes de probabilité et statistique.

1.4

Reconnaître les concepts fondamentaux et transversaux d'importantes théories de probabilité et statistique actuelles et établir les liens principaux entre ces théories.

1.5

Expliquer des théories de probabilité et statistique en motivant les énoncés et les définitions par des exemples et des contre-exemples et en mettant en évidence les idées principales.

1.6

Relier des concepts de probabilité et de statistique et des problématiques associées à leur contexte historique en ayant compris le rôle de ces outils en science.

2.

S’exprimer de façon claire, précise et rigoureuse dans les activités de communication tant en français que en anglais (niveau B1 CECRL).

2.1

Saisir, résumer et interpréter l’essentiel de communications scientifiques orales en statistique et probabilité.

2.2

Résumer, par des tables et graphiques informatifs et pertinents, l’information disponible dans un ensemble de données.

2.3

Rédiger des textes statistiques selon les conventions de la discipline.

2.4

Structurer un exposé oral, mettre en évidence les éléments clés, distinguer techniques et concepts et adapter l'exposé au niveau d'expertise des auditeurs.

2.5

Utiliser des outils médiatiques et informatiques variés pour communiquer (expliquer, rédiger, publier) des résultats d’analyses statistiques et leur interprétation dans le contexte de l’étude.

2.6

Dialoguer avec des collègues d'autres disciplines.

3.

Analyser rigoureusement et dans différents contextes disciplinaires, un problème ou un système complexe pour en extraire les points essentiels et les mettre en relation avec les outils théoriques les mieux adaptés.

3.1

Utiliser des solides connaissances de la méthodologie statistique dans des contextes multidisciplinaires liés aux sciences du vivant (médecine, biologie, etc).

3.2

Analyser un problème statistique et proposer une méthode (en validant les hypothèses sous-jacentes) et des outils adéquats pour l'étudier et le résoudre de façon approfondie et originale.

3.3

Utiliser plusieurs outils informatiques d'aide à la résolution de problèmes statistiques, tout en connaissant les limitations de ces outils.

3.4

Développer une analyse rigoureuse et originale pour comprendre et résoudre des problèmes spécifiques dans tous les domaines d'application de la biostatistique qu'il rencontrera dans sa profession, en respectant les contraintes imposées par le contexte.

3.5

Gérer de grandes bases de données.

4. Maîtriser les méthodes de base en probabilité et statistique et utiliser les outils spécifiques de la bio-statistique.

4.1

Développer de façon autonome son intuition statistique en anticipant les résultats attendus et en vérifiant la cohérence avec des résultats déjà existants.

4.2

Analyser un problème de recherche et proposer des outils adéquats pour l'étudier de façon approfondie et originale.

4.3

Etudier les propriétés de méthodes statistiques à l'aide de simulation.

4.4

Collaborer à la rédaction d'une communication scientifique pour une publication avec comité de revue.

4.5

Adapter des méthodes statistiques à des problématiques des sciences du vivant.

5.

Participer à la mise en Œuvre d'un projet de recherche avec un collaborateur issu d'une discipline des sciences du vivant.

5.1

Communiquer avec un collaborateur d'une des disciplines des sciences du vivant (médecin, pharmacien, ingénieur agronome, etc.), lui apporter un regard proactif et objectif par rapport à son problème, faire preuve de curiosité et de connaissances minimales pour sa discipline.

5.2

Cerner et reformuler les questions du collaborateur et y apporter des réponses adéquates, originales, documentées.

5.3

Planifier l'étude à mettre en oeuvre (par exemple, un essai clinique) pour apporter des réponses aux questions du collaborateur, identifier le plan d'expérience optimal.

5.4

Anticiper les différentes difficultés dans le déroulement d'une étude et proposer une solution appropriée.

5.5

Conseiller le collaborateur sur les aspects statistiques lors du déroulement de l'étude.

5.6

Ecrire un rapport clair, succinct et rigoureux présentant les résultats d'une analyse statistique appropriées des données.

5.7

Expliquer les résultats des analyses statistiques aux collaborateurs non-statisticiens.

6.

Etre autonome dans ses apprentissages et faire preuve d'esprit critique.

6.1

Rechercher dans la littérature statistique des sources et évaluer leur pertinence.

6.2

Lire et comprendre un texte statistique avancé et le situer correctement par rapport aux connaissances acquises.

6.3

Modéliser et résoudre un problème donné et être capable de s'initier à un nouveau champ de connaissances.

6.4

Juger de façon autonome de la pertinence d'une démarche statistique et de l'intérêt d'une théorie statistique.

## Programme structure

The program consists of

- a common core of at least 69 credits, including 38 credits of compulsory courses and a minimum of 31 credits of elective courses.
- a finality of 30 credits including a thesis of 20 credits
- Elective courses offered in the options of the program "Clinical biostatistics / epidemiology" and "Biometrics, technometry and bioinformatics".

The student may request to include in his program other teaching units useful as part of the Master up to a maximum of 10 credits. These courses will be subject to the approval of the jury. Among these 10 credits a language course can be included for a maximum

of 5 credits. These extra-curricular courses must be relevant, of a sufficient level and adapted to the profile of the program and of the student.

The student prepares his program in consultation with a study advisor, then submits it to the jury for approval.

# BSTA2M Programme

## Detailed programme by subject

### *CORE COURSES*

- Mandatory
- Optional
- Not offered in 2025-2026
- Not offered in 2025-2026 but offered the following year
- Offered in 2025-2026 but not the following year
- Not offered in 2025-2026 or the following year
- Activity with requisites
- Open to incoming exchange students
- Not open to incoming exchange students
- [FR] Teaching language (FR, EN, ES, NL, DE, ...)

Click on the course title to see detailed informations (objectives, methods, evaluation...)

#### Cours obligatoires (38 credits)

| | | | | Year 1 | Year 2 |
|---|---|---|---|---|---|
| LSTAT2020 | Statistical softwares and basic statistical programming | | FR [q1] [15h+15h] [4 Credits] | x | |
| LSTAT2040 | Statistical analysis | Anouar El Ghouch | FR [q2] [30h+15h] [5 Credits] | x | |
| LSTAT2190 | Concepts and treatment of random vectors | | FR [q1] [15h+7.5h] [4 Credits] | x | |
| LSTAT2100 | Discrete data analysis. | | FR [q2] [30h+7.5h] [5 Credits] | x | |
| LSTAT2110 | Data Analysis | | FR [q1] [30h+7.5h] [5 Credits] | x | |
| LSTAT2120 | Linear models | Christian Hafner | EN [q1] [30h+7.5h] [5 Credits] *> French-friendly* | x | |
| LSTAT2130 | Introduction to Bayesian statistics | | EN [q2] [22.5h+7.5h] [5 Credits] | x | |
| LSTAT2380 | Statistical consulting | | EN [q1+q2] [30h] [5 Credits] *> French-friendly* | | x |

#### Cours au choix

*Choisir au minimum 8 cours de cette liste, dont au moins 2 cours de statistique computationnelle et au moins 2 cours de modélisation.*

**Modélisation**

| | | | | Year 1 | Year 2 |
|---|---|---|---|---|---|
| LSTAT2210 | Mixed linear models | | FR [q1] [15h+7.5h] [4 Credits] | | x |
| LSTAT2150 | Nonparametric statistics: smoothings methods | | EN [q1] [15h+5h] [4 Credits] | | x |
| LDATS2450 | Statistical learning. Estimation, selection and inference [C] | | EN [q2] [30h+7.5h] [5 Credits] | | x |
| LSTAT2220 | Analysis of survival and duration data | | FR [q1] [15h+5h] [4 Credits] *> English-friendly* | x | x |
| LSTAT2230 | Advanced survival models | | EN [q2] [15h+5h] [4 Credits] | | x |

**Statistique computationnelle**

| | | | | Year 1 | Year 2 |
|---|---|---|---|---|---|
| LDATS2350 | Data Mining | | EN [q2] [15h+15h] [4 Credits] | x | x |
| LSTAT2340 | Statistical Analyses of -omics Data [M] | | FR [q2] [30h+10h] [5 Credits] *> English-friendly* | x | x |

| | | | | Year 1 | 2 |
|---|---|---|---|---|---|
| ⊠ LDATS2360 | Seminar in data management: basic | | FR [q1] [15h+10h] [4 Credits] | x | x |
| ⊠ LSTAT2185 | Numerical Methods for Statistics: Optimization, Simulations and the Bootstrap [M] | | EN [q1] [30h+15h] [5 Credits] *> French-friendly* | x | x |
| ⊠ LDATS2030 | Statistique et data sciences avec R: Programmation avancée | | FR [q2] [15h+15h] [4 Credits] | x | |

**⊠ Statistique générale**

| | | | | | |
|---|---|---|---|---|---|
| ⊠ LSTAT2140 | Non parametric statistics [M] | | FR [q1] [15h+5h] [4 Credits] *> English-friendly* | x | x |
| ⊠ LSTAT2170 | Times series | | EN [q2] [30h+7.5h] [5 Credits] | x | x |
| ⊠ LSTAT2200 | Survey and Sampling | | FR [q2] [15h+5h] [4 Credits] | x | x |
| ⊠ LSTAT2310 | Statistical quality control. | | FR [q1] [15h+5h] [4 Credits] *> English-friendly* | x | x |
| ⊠ LSTAT2390 | Applied statistics workshops | | EN [q1+q2] [15h] [3 Credits] *> French-friendly* | | x |

## ○ Philosophie

*Choisir maximum un cours parmi:*

| | | | | | |
|---|---|---|---|---|---|
| ⊠ LFILO2003E | Ethics in the Sciences and technics (sem) | | FR [q2] [15h+15h] [2 Credits] | x | x |
| ⊠ LSC2001 | Introduction to contemporary philosophy | Charles Pence<br>Peter Verdée | FR [q2] [30h] [2 Credits] | x | x |
| ⊠ LSC2220 | Philosophy of science | Alexandre Guay | EN [q2] [30h] [2 Credits] | x | x |

## ⊠ Optional courses :

*These credits are not counted within the 120 required credits.*

| | | | | | |
|---|---|---|---|---|---|
| ⊠ LSST1001 | IngénieuxSud | Stéphanie Merle<br>Jean-Pierre Raskin | FR [q1+q2] [15h+45h] [5 Credits] | x | x |
| ⊠ LSST1002M | Information and critical thinking - MOOC | | FR [q2] [30h+15h] [3 Credits] | x | x |

## *PROFESSIONAL FOCUS [30.0]*

La finalité spécialisée comprend le mémoire, l'UE de base en statistique du biostatisticien et une UE en statistique appliquée.

- Mandatory
- Optional
- Not offered in 2025-2026
- Not offered in 2025-2026 but offered the following year
- Offered in 2025-2026 but not the following year
- Not offered in 2025-2026 or the following year
- Activity with requisites
- Open to incoming exchange students
- Not open to incoming exchange students
- [FR] Teaching language (FR, EN, ES, NL, DE, ...)

Click on the course title to see detailed informations (objectives, methods, evaluation...)

### *Content:*

#### Cours obligatoires de la finalité

| | | | | Year 1 | Year 2 |
|---|---|---|---|---|---|
| LSTAT2828 | memory in biostatistics | | [FR] [q1 or q2] [] [20 Credits] | | x |
| LSTAT2330 | Statistics in clinical trials. | | [FR] [q2] [22.5h+7.5h] [5 Credits] | x | |
| LSTAT2320 | Design of experiment. [M] | | [FR] [q2] [30h+10h] [5 Credits] *> English-friendly* | x | x |

## OPTIONS

The programme must be completed with electives from this list, including at least two priority courses.
Any option for which a minimum of 15 credits have been validated will be mentioned in the appendix to the diploma.

> Biostatistique clinique et épidémiologie *[ en-prog-2025-bsta2m-bbsta220o ]*
> Biométrie, technométrie et bioinformatique *[ en-prog-2025-bsta2m-lbsta210o ]*

## BIOSTATISTIQUE CLINIQUE ET ÉPIDÉMIOLOGIE

- Mandatory
- Optional
- Not offered in 2025-2026
- Not offered in 2025-2026 but offered the following year
- Offered in 2025-2026 but not the following year
- Not offered in 2025-2026 or the following year
- Activity with requisites
- Open to incoming exchange students
- Not open to incoming exchange students
- [FR] Teaching language (FR, EN, ES, NL, DE, ...)

Click on the course title to see detailed informations (objectives, methods, evaluation...)

### Content:

| | | | | Year 1 | Year 2 |
|---|---|---|---|---|---|
| **Cours prioritaires** | | | | | |
| LSTAT2930 | Training course or work of application in biostatistics | | FR [q1 or q2] [] [5 Credits] | x | x |
| WFSP2238 | Advanced epidemiology | | EN [q2] [20h+20h] [5 Credits] | x | x |
| WESP2232 | Genomic epidemiology | | EN [q2] [15h+15h] [3 Credits] | x | x |
| WFARM2513 | Pharmacocinétique approfondie | Laure Elens | EN [q2] [22.5h] [3 Credits] *> English-friendly* | x | x |
| **Autres cours au choix** | | | | | |
| WESP2234 | Clinical decision making | | FR [q1] [30h] [3 Credits] | x | x |
| WFSP2201 | Advanced methods in public health : seminar | | EN [q2] [15h] [3 Credits] | x | x |
| WFSP2202 | Health survey methods | Stefaan Demarest<br>Lydia Gisle<br>Vincent Lorant (coord.) | EN [q1] [20h] [5 Credits] | x | x |
| WFARM2196 | Rational therapeutic choices (Introduction to evidence-based medicine and pharmacoeconomy) | | EN [q1] [30h+10h] [4 Credits] | x | x |
| WFSP2228 | Systematic literature review, realist evaluation and meta-analysis | | EN [q2] [20h+10h] [3 Credits] | x | x |

## BIOMÉTRIE, TECHNOMÉTRIE ET BIOINFORMATIQUE

- Mandatory
- Optional
- Not offered in 2025-2026
- Not offered in 2025-2026 but offered the following year
- Offered in 2025-2026 but not the following year
- Not offered in 2025-2026 or the following year
- Activity with requisites
- Open to incoming exchange students
- Not open to incoming exchange students
- [FR] Teaching language (FR, EN, ES, NL, DE, ...)

Click on the course title to see detailed informations (objectives, methods, evaluation...)

### Content:

| | | | | Year 1 | Year 2 |
|---|---|---|---|---|---|
| **Cours prioritaires** | | | | | |
| LSTAT2930 | Training course or work of application in biostatistics | | FR [q1 or q2] [] [5 Credits] | x | x |
| LBRTI2101A | Data Science in bioscience engineering | | FR [q1] [22.5h+15h] [3 Credits] > *English-friendly* | x | x |
| LGBIO2010 | Bioinformatics | Pierre Dupont | EN [q1] [30h+30h] [5 Credits] > *French-friendly* | | x |
| LINFO2262 | Machine Learning :classification and evaluation | | EN [q2] [30h+30h] [6 Credits] > *French-friendly* | | x |
| **Autres cours au choix** | | | | | |
| LBRMC2201 | Bioinformatics : DNA and protein sequence analysis | | EN [q1] [30h+15h] [4 Credits] > *French-friendly* | | x |
| LBRAI2220A | Quantitative genetics, crop improvement and biotechnology | | FR [q2] [20h+7.5h] [3 Credits] > *English-friendly* | x | x |
| LGBIO2050 | Medical Imaging | Greet Kerckhofs<br>John Lee<br>Benoît Macq | EN [q1] [30h+30h] [5 Credits] > *French-friendly* | x | x |
| WSBIM2122 | Omics data analysis | Laurent Gatto | EN [q1] [30h+10h] [3 Credits] | | x |

# Supplementary classes

***To access this Master, students must have a good command of certain subjects. If this is not the case, in the first annual block of their Masters programme, students must take supplementary classes chosen by the faculty to satisfy course prerequisites.***

The complementary module to the Master's degree in Statistics, Biostatistics Orientation aims to prepare a student who does not have the required knowledge of probability calculation and statistics, mathematics, computer science, biology and English to undertake the studies of the Master's degree in Statistics, Biostatistics Orientation. The proposed activities include theoretical teaching units, exercise sessions and practical exercises.

This additional module is intended for all students whose admission is not direct (see the Master's admission requirements). A study advisor will inform the student of the list of SUs to be followed and this list will be approved by the jury.

- Mandatory
- Optional
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- Not offered in 2025-2026 but offered the following year
- Offered in 2025-2026 but not the following year
- Not offered in 2025-2026 or the following year
- Activity with requisites
- Open to incoming exchange students
- Not open to incoming exchange students
- [FR] Teaching language (FR, EN, ES, NL, DE, ...)

Click on the course title to see detailed informations (objectives, methods, evaluation...)

*Maximum 60 credit(s)*

## Bloc intégré de probabilité, statistique et mathématique

| | | | |
|---|---|---|---|
| LSTAT2011 | Éléments de mathématiques pour la statistique | | FR [q1] [15h+15h] [3 Credits] |
| LSTAT2014 | Elements of probability and mathematical statistics | | FR [q1] [22.5h+22.5h] [5 Credits] |

## Cours de mathématiques

| | | | |
|---|---|---|---|
| LBIR1110 | Introduction to analysis | Emmanuel Hanert | FR [q1] [30h+30h] [6 Credits] |
| LMAT1101 | Mathematics 1 | Pedro Dos Santos Santana Forte Vaz | FR [q1] [30h+20h] [4 Credits] |
| LMAT1102 | Mathematics 2 | Augusto Ponce | FR [q2] [30h+30h] [4 Credits] |
| LINGE1114 | Introduction to mathematical modelling : analysis [M] | | FR [q1] [30h+30h] [5 Credits] |
| LINGE1121 | Introduction to mathematical modelling : algebra [M] | | FR [q1] [30h+30h] [5 Credits] |

## Cours d'informatique

| | | | |
|---|---|---|---|
| LINGE1225 | Programming in Economics and Management [M] | Marco Saerens | FR [q1] [30h+22.5h] [4 Credits] |

## Cours de la spécialité

| | | | |
|---|---|---|---|
| LBIO1110 | Life : diversity and evolution | | FR [q1] [30h+10h] [4 Credits] |
| LBIO1114 | Introduction to biology | Patrick Dumont | FR [q2] [30h+7.5h] [3 Credits] |
| LBIO1111 | Cell and molecular biology | Patrick Dumont Charles Hachez | FR [q1] [30h+20h] [5 Credits] |
| LFSM1104A | Biologie cellulaire et éléments d'histologie (partim A FSA) | | FR [q2] [45h] [4 Credits] |
| LPSP1005 | General biology, including elements of human genetics | François Chaumont Patrick Dumont Charles Hachez | FR [q1] [30h] [4 Credits] |
| WMD1102 | Physique expérimentale et introduction mathématique aux sciences expérimentales (1e partie) | | FR [q1] [60h+21h] [8 Credits] |
| WMDS1113 | Epidémiologie, santé publique et soins de santé [M] | Benoît Boland Séverine Henrard Jean Macq (coord.) Andrea Penaloza-Baeza | FR [q2] [26h+10h] [4 Credits] |

## Cours de probabilités et statistique

| | | | |
|---|---|---|---|
| LBIR1212 | Probabilities and statistics (I) | Patrick Bogaert | FR [q1] [30h+15h] [4 Credits] |
| LBIR1315 | Probability and statistics II | Patrick Bogaert | FR [q1] [22.5h+22.5h] [3 Credits] |
| LINGE1222 | Multivariate Statistical Analysis [M] | | FR [q2] [30h+15h] [4 Credits] |
| LPSP1209 | Statistics, inference on one or two variables | | FR [q1] [22.5h+15h] [4 Credits] |
| LPSP1306 | Statistics: descriptive analysis and GLM multivariate data modeling | | FR [q2] [30h+15h] [4 Credits] |
| LMAFY1101 | Data exploration and introduction to statiscal inference | Anouar El Ghouch | FR [q2] [30h+30h] [5 Credits] |
| LBIO1283 | Statistical principles and biological data analysis | Nicolas Schtickzelle | FR [q2] [30h+40h] [4 Credits] |

## Cours d'anglais (3 credits)

| | | | |
|---|---|---|---|
| LANGL1330 | English intermediate level - 1st part | Stéphanie Brabant<br>Estelle Dagneaux<br>Jean-Luc Delghust<br>Aurélie Deneumoustier<br>Fanny Desterbecq<br>Marie Duelz<br>Claudine Grommersch<br>Sandrine Mulkers (coord.)<br>Marc Piwnik (coord.)<br>Françoise Stas<br>Anne-Julie Toubeau | EN [q1 or q2] [20h] [3 Credits] |
| LANGL1853 | English: Reading Comprehension | Estelle Dagneaux (coord.) | EN [q2] [30h] [3 Credits] |

## Course prerequisites

The **table** below lists the activities (course units, or CUs) for which there are one or more prerequisites within the programme, i.e. the programme CU for which the learning outcomes must be certified and the corresponding credits awarded by the jury before registering for that CU.

These activities are also identified **in the detailed programme**: their title is followed by a yellow square.

**Prerequisites and student's annual programme**

As the prerequisite is for CU registration puposes only, there are no prerequisites within a programme year. Prerequisites are defined between CUs of different years and therefore influence the order in which the student will be able to register for the programme's CUs.

In addition, when the jury validates a student's individual programme at the beginning of the year, it ensures its coherence, meaning that it may:

- require the student to combine registration in two separate CUs which it considers necessary from a pedagogical point of view.
- transform a prerequisite into a corequisite if the student is in the final year of a degree course.

For more information, please consult the Academic Regulations and Procedures.

**# Prerequisities list**

**LSTAT2930** "Stage ou travail d'application en biostatistique" has prerequisite(s) LSTAT2020 ET LSTAT2110 ET LSTAT2120

- LSTAT2020 - Statistical softwares and basic statistical programming
- LSTAT2110 - Data Analysis
- LSTAT2120 - Linear models

## The programme's courses and learning outcomes

For each UCLouvain training programme, a reference framework of learning outcomes specifies the the skills expected of every graduate on completion of the programme. Course unit descriptions specify targeted learning outcomes, as well as the unit's contribution to reference framework of learning outcomes.

# BSTA2M - Information

## Access Requirements

*Master course admission requirements are defined by the French Community of Belgium Decree of 7 November 2013 defining the higher education landscape and the academic organisation of courses.*

*General and specific admission requirements for this programme must be satisfied at the time of enrolling at the university.*

*Unless explicitly mentioned, the bachelor's, master's and licentiate degrees listed in this table or on this page are to be understood as those issued by an institution of the French, Flemish or German-speaking Community, or by the Royal Military Academy.*

***In the event of the divergence between the different linguistic versions of the present conditions, the French version shall prevail.***

SUMMARY



### Specific access requirements

En plus de remplir les conditions d'accès décrites ci-dessous, les candidats devront apporter la preuve d'une maîtrise suffisante de la langue française (niveau B1 du Cadre européen commun de référence)

Students who wish to be admitted on the basis of a dossier (see tables below) are invited to consult the criteria for the evaluation of application.

### University Bachelors

| Diploma | Special Requirements | Access | Remarks |
|---|---|---|---|
| **UCLouvain Bachelors** | | | |
| Bachelor in Bioengineering | | Direct access | |
| Bachelor in Engineering<br>Bachelor in Mathematics<br>Bachelor in Physics<br>Bachelor in Computer Science (Louvain-la-Neuve)<br>Bachelor in Computer Science (Charleroi)<br>Bachelor : Business Engineering (Louvain-la-Neuve)<br>Bachelor : Business Engineering (Mons) | | Direct access | |
| | | Direct access | |
| | | Direct access | |
| | | Direct access | |
| | | Direct access | |
| | | Direct access | |
| | | Direct access | |
| | | Direct access | |
| All Bachelors | If student has succeeded Minor in Statistics, Actuarial Sciences and Data Sciences | Direct access | |
| All Bachelors | If the student did not succeed Minor in Statistics, Actuarial Sciences and Data Sciences | Access based on application | |

| | |
|---|---|
| **Others Bachelors of the French speaking Community of Belgium** | |
| Bachelier en sciences de l'ingénieur, orientation bioingénieur | Direct access |
| All other Bachelors | Access based on application |
| **Bachelors of the Dutch speaking Community of Belgium** | |
| All Bachelors | Access based on application |
| **Foreign Bachelors** | |
| All Bachelors | Access based on application |

## Non university Bachelors

> Find out more about links to the university

| Diploma | Access | Remarks |
|---|---|---|
| BA - technologue de laboratoire médical - crédits supplémentaires entre 45 et 60<br>BA en agronomie, orientation agro-industries et biotechnologies - crédits supplémentaires entre 45 et 60<br>BA en agronomie, orientation agronomie des régions chaudes - crédits supplémentaires entre 45 et 60<br>BA en agronomie, orientation environnement - crédits supplémentaires entre 45 et 60<br>BA en agronomie, orientation forêt et nature - crédits supplémentaires entre 45 et 60<br>BA en agronomie, orientation systèmes alimentaires durables et locaux - crédits supplémentaires entre 45 et 60<br>BA en agronomie, orientation techniques et gestion agricoles - crédits supplémentaires entre 45 et 60<br>BA en agronomie, orientation techniques et gestion horticoles - crédits supplémentaires entre 45 et 60<br>BA en agronomie, orientation technologie animalière - crédits supplémentaires entre 45 et 60<br>BA en automatisation - crédits supplémentaires entre 45 et 60<br>BA en domotique - crédits supplémentaires entre 45 et 60<br>BA en informatique et systèmes, orientation automatique - crédits supplémentaires entre 45 et 60<br>BA en informatique et systèmes, orientation gestion technique des bâtiments - domotique - crédits supplémentaires entre 45 et 60<br>BA en informatique et systèmes, orientation informatique industrielle - crédits supplémentaires entre 45 et 60<br>BA en informatique et systèmes, orientation réseaux et télécommunications - crédits supplémentaires entre 45 et 60<br>BA en informatique et systèmes, orientation sécurité des systèmes - crédits supplémentaires entre 45 et 60<br>BA en informatique et systèmes, orientation technologie de l'informatique - crédits supplémentaires entre 45 et 60<br>BA en informatique, orientation informatique industrielle - crédits supplémentaires entre 45 et 60<br>BA en informatique, orientation réseaux et télécommunications - crédits supplémentaires entre 45 et 60<br>BA en informatique, orientation sécurité des systèmes - crédits supplémentaires entre 45 et 60<br>BA en informatique, orientation technologies de l'informatique - crédits supplémentaires entre 45 et 60 | Les enseignements supplémentaires éventuels peuvent être consultés dans le module complémentaire. | Type court |

## Holders of a 2nd cycle University degree

| Diploma | Special Requirements | Access | Remarks |
|---|---|---|---|
| **"Licenciés"** | | | |
| Toutes les licences | | Access based on application | |
| **Masters** | | | |

| | | |
|---|---|---|
| Masters of the french community of Belgium<br>Science des données<br>Sciences actuarielles<br>Statistique<br>Bioingénieur<br>Ingénieur civil (sauf ingénieur civil architecte)<br>Sciences mathématiques<br>Ingénieur de gestion<br>Sciences informatiques<br>Sciences physiques<br>Sciences biologiques<br>Sciences biomédicales | Direct access | Depending of the sudent's previous studies, a student may be exempted from a maximum of 60 activity credits and possibly complete the master's degree in Biostatistics in a single year. |
| All other masters | Access based on application | |

## Holders of a non-University 2nd cycle degree

## Access based on validation of professional experience

> It is possible, under certain conditions, to use one's personal and professional experience to enter a university course without having the required qualifications. However, validation of prior experience does not automatically apply to all courses. Find out more about Validation of priori experience.

## Access based on application

Access based on application : access may be granted either directly or on the condition of completing additional courses of a maximum of 60 ECTS credits, or refused.

Foreign students who have succeeded an university education (minimum 3 years) with strong quantitative connotation and who have obtained at least 70% (or 14/20) of average for all successful university years in their home university, without fail in mathematics/ statistics/probability, have the possibility to apply for admission to the master's program in statistics, biostatistics orientation (120 ECTS).

Students who wish to be admitted on the basis of a dossier are invited to consult the criteria for the evaluation of application.

## Admission and Enrolment Procedures for general registration

The student contacts the LSBA secretariat if a faculty authorization has been requested by the registration service. The student then establishes his program with the study consultant of the purpose concerned (https://uclouvain.be/fr/facultes/sc/infos-lsba.html).

## Teaching method

Most of the teaching units applied statistics methods & tools include practical work on computers and an application project involved in the evaluation. This approach allows the student to systematically implement the tools presented in the methodological presentations and thus be prepared for field work. The implementation of projects also fosters a stimulating and friendly spirit of collaboration among the students in the program. The program offers the possibility of an internship in a company or in a research laboratory that will eventually complete the methodological aspects of the thesis. Most of the teaching units provided by statistical teachers are available on moodle or on the LSBA website. Some specialized teaching units are given by professors from companies and/or in English in order to familiarize the student with this language commonly used in the field of statistics.

## Evaluation

***The evaluation methods comply with the regulations concerning studies and exams. More detailed explanation of the modalities specific to each learning unit are available on their description sheets under the heading "Learning outcomes evaluation method".***

Each course in the programme involves an oral or written examination. There may also be a project leading to a report which will form part of the assessment. The work placement (or work involving statistical application) and the dissertation both involve the production of a document to be defended in an oral examination with an examination board.

## Mobility and/or Internationalisation outlook

Students who have achieved outstanding results in the first annual block will be allowed to participate in international exchange programs organized by the LSBA. Currently, bilateral exchange agreements are being established with several partners in and outside Europe.

Students interested in participating in an international exchange program are invited to contact the person responsible for them in the Faculty of Science or the contact person in the LSBA.

Detailled information on https://uclouvain.be/fr/facultes/sc/programmes-d-echange-d-etudiants.html

## Contacts

### Curriculum Management

Entity

| | |
|---|---|
| Structure entity | SST/SC/LSBA |
| Denomination | (LSBA) |
| Faculty | Faculty of Science (SC) |
| Sector | Sciences and Technology (SST) |
| Acronym | LSBA |
| Postal address | Voie du Roman Pays 20 - bte L1.04.01<br>1348 Louvain-la-Neuve<br>Tel: +32 (0) 10 47 43 14 - Fax: +32 (0) 10 47 30 32 |
| Website | https://uclouvain.be/fr/facultes/sc/lsba |

Academic supervisor: Anouar El Ghouch

Jury

- Foreman of the jury: Christian Hafner
- Secretary of the jury: Rainer von Sachs
- Study advisor: Catherine Legrand

Useful Contact(s)

- Secretary of The Louvain School of Statistics, Biostatistics and Actuarial Sciences: Sophie Malali