

# Master in Statistics : General

## Focus Research General

The Master in Statistics is a two-year programme organised into two 'blocks'. The first block includes (i) required courses, (ii) courses specific to each specialisation (theoretical statistics, applied statistics, or economics and statistics; see above), and (iii) possibly elective courses. The second block is more flexible, and includes the Master's dissertation (which may involve a work placement), participation to seminars, a course on statistical software applications, and several elective courses.

### Bloc 1 | M-STATA | MA-STAT

## Cours obligatoires

Remarque : en fonction du dossier de l'étudiant, le jury pourra être amené à remplacer certains cours ci-dessous par d'autres cours du programme

STAT-F404 **Graduate statistics** | Thomas VERDEBOUT (Coordinator) and Davy PAINDAVEINE  
 ⌚ 5 credits [lecture: 24h] 📅 first term 🗨 English

STAT-F405 **Time series analysis** | Yves-Caoimhin SWAN (Coordinator)  
 ⌚ 5 credits [lecture: 24h, tutorial classes: 12h] 📅 first term 🗨 English

STAT-F407 **Stochastic models** | Maarten JANSEN (Coordinator) and Jennifer ALONSO GARCIA  
 ⌚ 5 credits [lecture: 36h, tutorial classes: 12h] 📅 first term 🗨 English

*A total of 15 credits chosen from the following*

### Module 1

MATH-F309 **Statistique mathématique II** | Thomas VERDEBOUT (Coordinator) and Sophie Niang  
 (optional) ⌚ 5 credits [lecture: 24h, tutorial classes: 24h] 📅 first term 🗨 French

STAT-F406 **Modèles de régression** | Davy PAINDAVEINE (Coordinator)  
 (optional) ⌚ 5 credits [lecture: 24h, tutorial classes: 12h] 📅 second term 🗨 French

STAT-F408 **Computational statistics** | Maarten JANSEN (Coordinator)  
 (optional) ⌚ 5 credits [lecture: 24h, tutorial classes: 12h, project: 100h] 📅 second term 🗨 English

### Module 2

ECON-S428 **Graduate econometrics I** | Germain VAN BEVER (Coordinator)  
 (optional) ⌚ 10 credits [lecture: 24h, tutorial classes: 24h] 📅 first term 🗨 English

ECON-S429 **Graduate econometrics II** | Paula Eugenia GOBBI (Coordinator) and Alejandra Ramos  
 (optional) ⌚ 5 credits [lecture: 24h, tutorial classes: 24h] 📅 second term 🗨 English

*An alternative chosen from the two following*

## Statistique

INFO-F422 **Statistical foundations of machine learning** | Gianluca BONTEMPI (Coordinator)  
 (optional) ⌚ 5 credits [lecture: 24h, tutorial classes: 12h, project: 60h] 📅 second term 🗨 English

STAT-F410 **Inférence robuste** | Catherine DEHON (Coordinator)  
 (optional) ⌚ 5 credits [lecture: 24h, tutorial classes: 12h] 📅 second term 🗨 French

STAT-F414 **Méthodes de sondage** | Catherine VERMANDELE (Coordinator)  
 (optional) ⌚ 5 credits [lecture: 24h, tutorial classes: 12h] 📅 first term 🗨 French

STAT-F427 (optional) **Méthodes non paramétriques** | Catherine VERMANDELE (Coordinator)  
5 credits [lecture: 24h, tutorial classes: 12h] second term French

STAT-S401 (optional) **Analyse statistique multivariée** | Catherine DEHON (Coordinator)  
5 credits [lecture: 24h, tutorial classes: 12h] second term French

or

## Economie et statistique

ECON-S427 (optional) **Graduate macroeconomics I** | Fabio Blasutto (Coordinator)  
10 credits [lecture: 24h, tutorial classes: 24h] first term English

ECON-S430 (optional) **Graduate macroeconomics II** | Robert KOLLMANN (Coordinator)  
5 credits [lecture: 24h, tutorial classes: 24h] second term English

ECON-S431 (optional) **Graduate microeconomics II** | Luca Paolo Merlino (Coordinator)  
5 credits [lecture: 24h, tutorial classes: 24h] second term English

ECON-S510 (optional) **Graduate microeconomics I** | Georg KIRCHSTEIGER (Coordinator)  
10 credits [lecture: 24h, tutorial classes: 24h] first term English

## Cours optionnels

Au besoin, choisir un ou des cours dans la liste suivante afin d'arriver à un total de 60 crédits

MATH-F425 **Ondelettes et applications**  
5 credits [lecture: 24h, tutorial classes: 12h] second term French

STAT-F412 **Plans expérimentaux** | Marie-Pierre MALICE (Coordinator)  
5 credits [lecture: 24h, tutorial classes: 24h] first term French

STAT-F418 **Topics in nonparametric smoothing** | Maarten JANSEN (Coordinator)  
5 credits [lecture: 24h, tutorial classes: 12h] first term English  
Ce cours n'est pas donné en 2023-24, 2025-26 etc.

STAT-F420 **Topics in mathematical statistics** | Thomas VERDEBOUT (Coordinator)  
5 credits [lecture: 24h, tutorial classes: 12h] first term English

STAT-F421 **Topics in probability theory** | Yves-Caoimhin SWAN (Coordinator)  
5 credits [lecture: 24h, tutorial classes: 12h] second term English  
Ce cours n'est pas donné en 2024-2025, 2026-2027 etc.

STAT-F426 **Participation aux séminaires** | Maarten JANSEN (Coordinator)  
5 credits [project: 60h] first and second terms French

STAT-F600 **Multivariate and high-dimensional statistics** | Thomas VERDEBOUT (Coordinator)  
5 credits [lecture: 24h, practical work: 12h] first term English

TEMP-0000 **Cours extérieurs au programme**  
5 credits academic year French

# Master in Statistics : General

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### Bloc 2 | M-STATA | MA-STAT

## Cours obligatoires

- MEMO-F521 **Mémoire** | Maarten JANSEN (Coordinator)  
 25 credits [mfe/tfe: 300h] first and second terms
- STAT-F413 **Statistical softwares** | Maarten JANSEN (Coordinator) and Toufik ZAHAF  
 10 credits [lecture: 24h, tutorial classes: 24h, project: 200h] second term English
- STAT-F509 **Participation aux séminaires** | Maarten JANSEN (Coordinator)  
 5 credits [project: 60h] first and second terms French

## Cours optionnels

Compléter votre programme de façon à arriver à un total de 60 crédits en choisissant un ou plusieurs cours dans les listes du bloc 1 ou dans la liste suivante:

- ACTU-F401 **Modèles financiers I** | Griselda DEELSTRA (Coordinator)  
 5 credits [lecture: 36h, tutorial classes: 12h] first term French
- ACTU-F403 **Assurance non vie I** | Julien TRUFIN (Coordinator)  
 5 credits [lecture: 36h, tutorial classes: 12h] first term French
- ECON-S432 **Advanced international trade** | Paola CONCONI (Coordinator), Filippo Biondi and Mathieu PARENTI  
 5 credits [lecture: 24h] second term English
- ECON-S513 **Behavioral economics** | Georg KIRCHSTEIGER (Coordinator)  
 5 credits [lecture: 24h] second term English
- ECON-S519 **Graduate microeconomics III** | Georg KIRCHSTEIGER (Coordinator)  
 5 credits [lecture: 24h] first term English
- ECON-S520 **Graduate macroeconomics III**  
 5 credits [lecture: 36h] first term English
- ECON-S521 **Graduate econometrics III** | David PREINERSTORFER (Coordinator)  
 5 credits [lecture: 24h] second term English  
 Ce cours ne sera pas donné en 2022-2023.
- MATH-F502 **Imagerie et problèmes inverses** | Ignace LORIS (Coordinator)  
 5 credits [lecture: 24h, tutorial classes: 12h] second term French
- MATH-H401 **Numerical methods** | Artem NAPOV (Coordinator)  
 4 credits [lecture: 24h, practical work: 24h] first term English
- STAT-F415 **Calcul stochastique** | Griselda DEELSTRA (Coordinator)  
 5 credits [lecture: 24h] second term French
- STAT-F428 **Bayesian Statistics**  
 5 credits [lecture: 24h] first term
- STAT-F430 **Longitudinal data analysis**  
 5 credits [lecture: 24h] first term
- STAT-F507 **Sequential analysis**  
 5 credits [lecture: 24h] second term English

STAT-Y002

📅 unknown term

## Autres cours

Outre les cours ci-dessus, l'étudiant peut également choisir parmi les cours non pris en Bloc 1. Des cours d'autres masters de l'ULB ou de masters d'autres universités peuvent également être choisis (sous réserve d'approbation par le Jury), pour un maximum de 60 crédits annuels.

### *An alternative chosen from the three following*

HULB-0000 **Cours externe à l'Université**  
(optional) ⌚ 5 credits 📅 academic year

*or*

HULB-0000 **Cours externe à l'Université**  
(optional) ⌚ 10 credits 📅 academic year

*or*

### *One course chosen from the following*

TEMP-0000 **Cours extérieurs au programme**  
(optional) ⌚ 5 credits 📅 academic year 🗨️ French

TEMP-0000 **Cours extérieurs au programme**  
(optional) ⌚ 10 credits 📅 academic year 🗨️ French

