



Bachelor in Mathematics

The 2025-2026 programme is subject to change. It is provided for information purposes only.

Programme mnemonic

BA-MATH

Studies level

Bachelor

Learning language

french

Schedule

office hours

Studies category / subcategory

Sciences and technics / Sciences

Campus

Plaine

Personalised interactions with assistants and professors from the first year.

Special training in writing mathematics.

You will have at your disposal: computer rooms with an internet connection and a library.

Teaching methods

Most lectures are taught on the blackboard, and seconded by exercic sessions where the students work by themselves, with the available help of an assistant.

Evaluatons of the students performance are in January and June.

Succeed in your studies

Choose

The information and guidance counsellors at the InfOR-études [<https://www.ulb.be/en/studies-info-desk-1>] service will help you choose your studies throughout the year.

Succeed

Take part in preparatory courses [<https://www.ulb.be/en/studies-info-desk-1>] or get help to succeed [<https://www.ulb.be/en/studies-info-desk-1>], before or during your studies.

Get help

Apply for financial aid, look for accommodation or a student job, get support [<https://www.ulb.be/fr/aides-services-et-accompagnement/aid-services-and-support-1>] for your specific needs.

Programme objectives

Mathematics play a crucial role in all domains of science and technology. Learning mathematics develops great ability for abstraction, rigor and inventiveness. After their studies former students will be able to apply existing methods, to elaborate new theories or applications and to teach their field. The ability to analyse and solve problems, both theoretically and practically, allow students to become operational in a broad variety of fields such as mathematics, economy, finance, physics, astronomy, biomathematics, informatics, images and signals...

Programme's added value

Studying maths in Brussels offers to choose immediately a secondary field amongst biology, physics, informatics and economics.

The department has developed partnerships with the VUB, the other French speaking Belgian universities and universities of the North of France; this allows a large choice of options, in particular during the Master studies.

International/Openness

A one-year stay abroad is possible during the master's course; an "à la carte" programme is devised in conjunction with the host university in accordance with the principle of exchange programmes.



Possibilities to choose lectures given in other Belgian or French universities, mainly during the MA.

Job opportunities

If you go on to do a Master in Mathematics, you can go on to work in the following fields

- > research in the fields of mathematics, mathematical physics, astronomy, economics, information technology and bioinformatics
- > banking sector
- > insurance companies
- > consultancy
- > pharmaceuticals industry

- > teaching
- > Image and signal processing
- > The BA in mathematics is the natural way to the Master in Statistics and the Master in Actuarial Science (insurance and finance). It also provides a good background for the Master in Bioinformatics.

Contacts

 ba-math@ulb.be

 +32 2 650 58 64

 <https://sciences.ulb.be/departement-mathematique>



Bachelor in Mathematics

Mathematics with a secondary field to be chosen amongst Biology
Physics, informatics or economics.

Bloc 1 | BA-MATH

Cours obligatoires

- MATH-F101 [Calcul différentiel et intégral I](#) | Denis BONHEURE (Coordinator), Mélanie BERTELSON and Bruno PREMOSELLI
 15 credits [lecture: 90h, tutorial classes: 90h] first and second terms French
- MATH-F104 [Logique et rédaction de preuves](#) | Dimitri LEEMANS (Coordinator)
 10 credits [lecture: 36h, tutorial classes: 36h, project: 24h] first and second terms French
- MATH-F105 [Probabilités I](#) | Yves-Caoimhin SWAN (Coordinator)
 5 credits [lecture: 30h, tutorial classes: 30h] second term French
- MATH-F121 [Géométrie analytique et calcul matriciel](#) | Michele D'ADDERIO (Coordinator) and Joost VERCRUYSSÉ
 5 credits [lecture: 24h, tutorial classes: 24h] first term French
- MATH-F122 [Algèbre linéaire](#) | Michele D'ADDERIO (Coordinator), Samuel FIORINI and Joost VERCRUYSSÉ
 10 credits [lecture: 54h, tutorial classes: 54h] first and second terms French













An option chosen from (the same in bloc 1, bloc 2 and bloc 3):

- B1-MATH-E [Module Mathématique - Economie](#) > page
- B1-MATH-I [Module Mathématique - Informatique](#) > page
- B1-MATH-P [Module Mathématique - Physique](#) > page

Bachelor in Mathematics

Bloc 2 | BA-MATH

Cours obligatoires

- LANG-F201 [Anglais scientifique I](#) | Alexander CORNFORD (Coordinator)
5 credits [tutorial classes: 48h]  second term  English
- MATH-F201 [Calcul différentiel et intégral II](#) | Mélanie BERTELSON (Coordinator), Denis BONHEURE and Bruno PREMOSELLI
10 credits [lecture: 60h, tutorial classes: 60h]  first and second terms  French
- MATH-F207 [Statistique mathématique I](#) | Thomas VERDEBOUT (Coordinator) and Davy PAINDAVEINE
5 credits [lecture: 24h, tutorial classes: 24h]  first term  French
- MATH-F211 [Topologie](#) | Andriy Haydys (Coordinator)
5 credits [lecture: 24h, tutorial classes: 24h]  first term  French
- MATH-F223 [Théorie des groupes](#) | Dimitri LEEMANS (Coordinator)
5 credits [lecture: 24h, tutorial classes: 24h]  first term  French
- MATH-F224 [Anneaux et corps commutatifs](#) | Joost VERCRUYSE (Coordinator)
5 credits [lecture: 24h, tutorial classes: 24h]  second term  French



















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- B-MATH-E [Module Mathématique - Economie](#) > *page*
- B-MATH-I [Module Mathématique - Informatique](#) > *page*
- B-MATH-P [Module Mathématique - Physique](#) > *page*

Bachelor in Mathematics

Bloc 3 | BA-MATH













Cours obligatoires

- MATH-F3001 **Théorie de la mesure** | Mitia Duerinckx (Coordinator)
 5 credits [lecture: 30h, tutorial classes: 30h]  first term  French
- MATH-F3002 **Espaces fonctionnels et analyse de Fourier** | Denis BONHEURE (Coordinator) and Bruno PREMOSELLI
 5 credits [lecture: 30h, tutorial classes: 30h]  second term  French
- MATH-F302 **Probabilités II** | Yves-Caoimhin SWAN (Coordinator)
 5 credits [lecture: 24h, tutorial classes: 24h]  second term  French
- MATH-F305 **Travail de recherche et communication scientifique** | Špela SPENKO (Coordinator) and Antoine GLORIA
 5 credits [project: 60h]  second term  French
- MATH-F306 **Optimisation** | Ignace LORIS (Coordinator)
 5 credits [lecture: 24h, tutorial classes: 24h]  second term  French
- MATH-F309 **Statistique mathématique II** | Davy PAINDAVEINE (Coordinator) and Thomas VERDEBOUT
 5 credits [lecture: 24h, tutorial classes: 24h]  first term  French
- MATH-F310 **Differential geometry I** | Andriy Haydys (Coordinator)
 5 credits [lecture: 24h, tutorial classes: 24h]  first term  English
- MATH-F323 **Courbes algébriques** | Špela SPENKO (Coordinator)
 5 credits [lecture: 24h, tutorial classes: 24h]  first term  French
- MATH-F324 **Algèbre non commutative** | Špela SPENKO (Coordinator)
 5 credits [lecture: 24h, tutorial classes: 24h]  second term  French

Options pour tous

A total of five credits chosen from the following

- BIOL-F318 (optional) **Histophysiologie et développement animal** | Jacob SOUOPGUI (Coordinator), Eric BELLEFROID and Anna Maria MARINI
 5 credits [lecture: 48h]  first term  French
- ECON-S3002 (optional) **Méthode et modélisation économique** | P.-Guillaume MEON (Coordinator)
 5 credits [lecture: 24h]  first term  French
- ETHI-F201 (optional) **Sciences, éthique, histoire et société** | Grégoire Wallenborn (Coordinator) and Eric MURAILLE
 5 credits [lecture: 48h]  second term  French
- ETHI-F301 (optional) **Science et Société : analyse de controverses scientifiques** | Patrick MARDULYN (Coordinator) and Grégoire Wallenborn
 5 credits [lecture: 24h, project: 70h]  first term  French
- INFO-F202 (optional) **Langages de programmation 2** | John IACONO (Coordinator)
 5 credits [lecture: 24h, practical work: 24h, project: 30h]  first term  French
- INFO-F302 (optional) **Informatique fondamentale** | Emmanuel FILIOT (Coordinator)
 5 credits [lecture: 36h, tutorial classes: 12h, project: 30h]  first term  French

- INFO-F305
(optional) **Modélisation et simulation** | Gianluca BONTEMPI (Coordinator)
5 credits [lecture: 30h, tutorial classes: 24h, project: 6h]  first term  French
- INFO-H303
(optional) **Bases de données** | Esteban ZIMANYI (Coordinator)
5 credits [lecture: 24h, tutorial classes: 24h, practical work: 12h]  second term  French
- PHYS-F103
(optional) **Physique** | Mustapha TLIDI (Coordinator)
5 credits [lecture: 36h, tutorial classes: 24h]  second term  French
- PHYS-F201
(optional) **Thermodynamique** | Nicolas CHAMEL (Coordinator)
5 credits [lecture: 36h, tutorial classes: 24h]  second term  French
- PHYS-F203
(optional) **Introduction à la mécanique quantique** | Laurens Vanderstraeten (Coordinator)
5 credits [lecture: 30h, tutorial classes: 30h]  second term  French
- PHYS-F317
(optional) **How To Make (almost) Any Experiment Using Digital Fabrication** | Denis TERWAGNE (Coordinator)
5 credits [lecture: 24h, practical work: 36h]  first term  French

An option chosen from (the same in bloc 1, bloc 2 and bloc 3):

- B-MATH-E **Module Mathématique - Economie** > [page](#)
- B-MATH-I **Module Mathématique - Informatique** > [page](#)
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Bachelor in Mathematics

Options | BA-MATH

Module Mathématique - Economie | B1-MATH-E

Bloc 1

Mathématique et économie

ECON-S1001 (option) **Introduction à la microéconomie et à la macroéconomie** | P.-Guillaume MEON (Coordinator), Renaud FOUCART and Julien RAVET
 15 credits [lecture: 72h, tutorial classes: 48h] academic year French

Bloc 2

Mathématique et économie

ECON-S201 (option) **Théorie macroéconomique I : le court terme en économie fermée et ouverte** | Robert KOLLMANN (Coordinator)
 5 credits [lecture: 24h, tutorial classes: 24h] first term French

ECON-S202 (option) **Microeconomic theory : consumer and producer choice** | Bram DE ROCK (Coordinator)
 5 credits [lecture: 24h, tutorial classes: 24h] second term English

ECON-S203 (option) **Théorie monétaire I** | Mathias DEWATRIPONT (Coordinator)
 5 credits [lecture: 36h] first and second terms French

INFO-F205 (option) **Calcul formel et numérique** | Maarten JANSEN (Coordinator)
 5 credits [lecture: 24h, tutorial classes: 24h, project: 30h] second term French

INFO-F206 (option) **Informatique** | Olivier MARKOWITCH (Coordinator)
 5 credits [lecture: 24h, tutorial classes: 24h, project: 12h] first term French

Bloc 3

Mathématique et économie

GEST-S318 (option) **Introduction to theoretical finance** | Laurent GHEERAERT (Coordinator)
 5 credits [lecture: 24h, tutorial classes: 24h] second term English

STAT-S308 (option) **Introduction à l'économétrie** | Elise Petit (Coordinator) and Vincenzo VERARDI
 5 credits [lecture: 24h, tutorial classes: 24h] first term French

Module Mathématique - Informatique | B1-MATH-I

Bloc 1

Mathématique et informatique

INFO-F101 (option) **Programmation**
 10 credits [lecture: 36h, tutorial classes: 36h, practical work: 24h, project: 60h] first term French

INFO-F102 (option) **Fonctionnement des ordinateurs** | Gilles GEERAERTS (Coordinator)
 5 credits [lecture: 36h, practical work: 12h] first term French

Bloc 2

Mathématique et informatique

INFO-F103 (option) **Algorithmique 1** | Olivier MARKOWITCH (Coordinator) and Bernard FORTZ
 10 credits [lecture: 36h, tutorial classes: 36h, practical work: 24h, project: 60h] second term French





INFO-F106 (option) **Projets d'informatique 1** | Gwenaël JORET (Coordinator) and Tom LENAERTS
 5 credits [practical work: 24h, project: 120h]  first and second terms  French



INFO-F205 (option) **Calcul formel et numérique** | Maarten JANSEN (Coordinator)
 5 credits [lecture: 24h, tutorial classes: 24h, project: 30h]  second term  French

MATH-F307 (option) **Mathématiques discrètes** | Michele D'ADDERIO (Coordinator) and Samuel FIORINI
 5 credits [lecture: 36h, tutorial classes: 24h]  first term  French

Bloc 3

Mathématique et informatique


INFO-F203 (option) **Algorithmique 2** | Jean CARDINAL (Coordinator)
 5 credits [lecture: 24h, tutorial classes: 24h, project: 30h]  second term  French

INFO-F302 (option) **Informatique fondamentale** | Emmanuel FILIOT (Coordinator)
 5 credits [lecture: 36h, tutorial classes: 12h, project: 30h]  first term  French

Module Mathématique - Physique | B1-MATH-P

Bloc 1



Mathématique et physique


PHYS-F110 (option) **Physique générale I et II** | Pascal VANLAER (Coordinator), Michele SFERRAZZA and Sophie VAN ECK
 15 credits [lecture: 96h, tutorial classes: 84h]  first and second terms  French

Bloc 2

Mathématique et physique



INFO-F206 (option) **Informatique** | Olivier MARKOWITCH (Coordinator)
 5 credits [lecture: 24h, tutorial classes: 24h, project: 12h]  first term  French

MATH-F204 (option) **Mécanique analytique** | Frank FERRARI (Coordinator) and Glenn BARNICH
 10 credits [lecture: 60h, tutorial classes: 60h]  first and second terms  French

PHYS-F202 (option) **Relativité, électromagnétisme et optique ondulatoire** | Petr TINIAKOV (Coordinator)
 10 credits [lecture: 72h, tutorial classes: 48h]  first and second terms  French

Bloc 3

Mathématique et physique

MATH-F3141 (option) **Analyse numérique pour les équations aux dérivées partielles** | Bernard KNAEPEN (Coordinator)
 5 credits [lecture: 24h, tutorial classes: 24h]  first term  English/French

MATH-F3142 (option) **Introduction aux équations aux dérivées partielles** | Bruno PREMOSSELLI (Coordinator)
 5 credits [lecture: 24h, tutorial classes: 24h]  first term  French