

# 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](#) | Bruno PREMOSSELLI (Coordinator) and Mélanie BERTELSON  
🕒 15 credits [lecture: 90h, tutorial classes: 90h] 📅 first and second terms 🗨️ French
- MATH-F104 [Logique et rédaction de preuves](#) | Dimitri LEEMANS (Coordinator)  
🕒 5 credits [lecture: 24h, tutorial classes: 24h, project: 12h] 📅 second term 🗨️ 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](#) | Joost VERCRUYSE (Coordinator) and Anna Vanden Wyngaerd  
🕒 5 credits [lecture: 24h, tutorial classes: 24h] 📅 first term 🗨️ French
- MATH-F122 [Algèbre linéaire](#) | Joost VERCRUYSE (Coordinator) and Samuel FIORINI  
🕒 10 credits [lecture: 54h, tutorial classes: 54h] 📅 academic year 🗨️ French

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

- B1-MATH-B [Module Mathématique et biologie](#) > *page*
- 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), David Albert BEST and Hugh MURPHY  
 ⌚ 5 credits [tutorial classes: 48h] 📅 second term 🗨️ English
- MATH-F201 [Calcul différentiel et intégral II](#) | Antoine GLORIA (Coordinator) and Guillaume DUJARDIN  
 ⌚ 10 credits [lecture: 60h, tutorial classes: 60h] 📅 first and second terms 🗨️ French
- MATH-F207 [Statistique mathématique I](#) | Davy PAINDAVEINE (Coordinator)  
 ⌚ 5 credits [lecture: 24h, tutorial classes: 24h] 📅 first term 🗨️ French
- MATH-F211 [Topologie](#) | Denis BONHEURE (Coordinator) and Thibaut GROUY  
 ⌚ 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

#### One course chosen from the following

- 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

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

- B-MATH-B [Module Mathématique - Biologie](#) > page
- 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](#) | Antoine GLORIA (Coordinator) and Clément Cerovecki  
 5 credits [lecture: 30h, tutorial classes: 30h] first term French
- MATH-F3002 [Espaces fonctionnels et analyse de Fourier](#) | Bruno PREMOSELLI (Coordinator)  
 5 credits [lecture: 30h, tutorial classes: 30h] second term French
- MATH-F302 [Probabilités II](#) | Yves-Caoimhin SWAN (Coordinator)  
 5 credits [lecture: 30h, tutorial classes: 30h] second term French
- MATH-F305 [Travail de recherche et communication scientifique](#) | Špela SPENKO (Coordinator), Thomas Connor and Michele D'ADDERIO  
 5 credits [project: 60h] second term French
- MATH-F306 [Optimisation](#) | Ignace LORIS (Coordinator)  
 5 credits [lecture: 30h, tutorial classes: 30h] second term French
- MATH-F309 [Statistique mathématique II](#) | Thomas VERDEBOUT (Coordinator) and Sophie Niang  
 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] first term French

### Mesure transitoire 2023-2024

Si le cours MATH-F-3003 n'a pas été crédité en 2022-23, le cours MATH-F-224 fera partie du PAE 2023-24.

- MATH-F224 [Anneaux et corps commutatifs](#) | Joost VERCRUYSSSE (Coordinator)  
 5 credits [lecture: 24h, tutorial classes: 24h] second term French

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

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

# Bachelor in Mathematics

Options | BA-MATH

## Module Mathématique et biologie | B1-MATH-B

### Bloc 1

## Module Mathématiques et biologie

- BIOL-F105** (option) **Biologie générale** | Martine VERCAUTEREN (Coordinator), Mélanie BOECKSTAENS, Cyril GUEYDAN, Véronique KRUYIS and Karine VAN DONINCK  
 10 credits [lecture: 90h, tutorial classes: 6h, practical work: 20h] first and second terms French
- CHIM-F102** (option) **Chimie organique 1** | Cécile MOUCHERON (Coordinator)  
 5 credits [lecture: 30h, tutorial classes: 18h] second term French
- INFO-F206** (option) **Informatique** | Olivier MARKOWITCH (Coordinator)  
 5 credits [lecture: 24h, tutorial classes: 12h, project: 24h] first term French

### Bloc 2

## Mathématique et biologie

- BIOL-F204** (option) **Microbiologie moléculaire et cellulaire** | Laurence VAN MELDEREN (Coordinator) and Anne OP DE BEECK  
 5 credits [lecture: 36h] second term French
- BIOL-F208** (option) **Biochimie et physiologie de la cellule** | Vincent RAUSSENS (Coordinator), Véronique KRUYIS and Maud MARTIN  
 5 credits [lecture: 60h] first term French
- BIOL-F210** (option) **Evolution et diversité des bactéries et archées** | Isabelle GEORGE (Coordinator) and Jean-François FLOT  
 5 credits [lecture: 32h, practical work: 16h] first term French
- INFO-F205** (option) **Calcul formel et numérique** | Maarten JANSEN (Coordinator)  
 5 credits [lecture: 24h, tutorial classes: 24h, project: 30h] second term French

### Bloc 3

## Mathématique et biologie

- BIOL-F308** (option) **Mécanismes de l'évolution biologique** | Patrick MARDULYN (Coordinator) and Karine VAN DONINCK  
 5 credits [lecture: 48h, tutorial classes: 12h] first term French
- BIOL-F323** (option) **Génétique: aspects fondamentaux et appliqués** | Bruno ANDRE (Coordinator) and Benoît VANHOLLEBEKE  
 5 credits [lecture: 42h] academic year French

## Options de la filière biologie

*A total of five credits chosen from the following*

- BIOL-F309** (option/optional) **Ecologie** | Pierre Jacques MEERTS (Coordinator) and Jason VLEMINCKX  
 5 credits [lecture: 30h, practical work: 30h] first term French
- BIOL-F318** (option/optional) **Histophysiologie et développement animal** | Jacob SOUOPGUI (Coordinator), Eric BELLEFROID and Anna Maria MARINI  
 5 credits [lecture: 48h] first term French
- ETHI-F201** (option/optional) **Sciences, éthique, histoire et société** | Grégoire Wallenborn (Coordinator) and Eric MURAILLE  
 5 credits [lecture: 48h] second term French
- ETHI-F301** (option/optional) **Science et Société : analyse de controverses scientifiques** | Patrick MARDULYN (Coordinator) and Grégoire Wallenborn  
 5 credits [lecture: 24h, project: 70h] first term French

INFO-F305  
(option/optional)

**Modélisation et simulation** | Gianluca BONTEMPI (Coordinator)

5 credits [lecture: 30h, tutorial classes: 24h, project: 6h]  first term  French

INFO-H303  
(option/optional)

**Bases de données** | Esteban ZIMANYI (Coordinator)

5 credits [lecture: 24h, tutorial classes: 24h, practical work: 12h]  second term  French

PHYS-F517  
(option/optional)

**How To Make (almost) Any Experiment Using Digital Fabrication** | Denis TERWAGNE (Coordinator)

5 credits [lecture: 24h, practical work: 24h]  first term  French

## 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

INFO-F206  
(option)

**Informatique** | Olivier MARKOWITCH (Coordinator)

5 credits [lecture: 24h, tutorial classes: 12h, project: 24h]  first term  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), Naïm CORDEMANS and Patrick VAN ROY

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

### 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** | Vincenzo VERARDI (Coordinator)

5 credits [lecture: 24h, tutorial classes: 24h]  first term  French

## Options de la filière économie

*A total of five credits chosen from the following*

ECON-S3002  
(option/optional)

**Politique industrielle** | P.-Guillaume MEON (Coordinator) and Michele CINCERA

5 credits [lecture: 48h]  first term  French

ETHI-F201  
(option/optional)

**Sciences, éthique, histoire et société** | Grégoire Wallenborn (Coordinator) and Eric MURAILLE

5 credits [lecture: 48h]  second term  French



ETHI-F301  
(option/optional)

**Science et Société : analyse de controverses scientifiques** | Patrick MARDULYN (Coordinator) and Grégoire Wallenborn

5 credits [lecture: 24h, project: 70h]  first term  French

INFO-F305  
(option/optional)

**Modélisation et simulation** | Gianluca BONTEMPI (Coordinator)

5 credits [lecture: 30h, tutorial classes: 24h, project: 6h]  first term  French



PHYS-F517  
(option/optional)

**How To Make (almost) Any Experiment Using Digital Fabrication** | Denis TERWAGNE (Coordinator)

5 credits [lecture: 24h, practical work: 24h] 📅 first term 🗨 French

## Module Mathématique - Informatique | B1-MATH-I

### Bloc 1

## Mathématique et informatique

INFO-F101  
(option)

**Programmation** | Thierry MASSART (Coordinator)

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

INFO-F106  
(option)

**Projets d'informatique 1** | Gwenaël JORET (Coordinator) and Tom LENAERTS

5 credits [practical work: 12h, project: 120h] 📅 first and second terms 🗨 French

### Bloc 2

## Mathématique et informatique

INFO-F103  
(option)

**Algorithmique 1** | Olivier MARKOWITCH (Coordinator), Bernard FORTZ and Dimitrios PAPADIMITRIOU

10 credits [lecture: 36h, tutorial classes: 36h, practical work: 24h, project: 60h] 📅 second term 🗨 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** | Samuel FIORINI (Coordinator) and Laurent LA FUENTE-GRAYV

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

## Options de la filière informatique

*A total of five credits chosen from the following*

ETHI-F201  
(option/optional)

**Sciences, éthique, histoire et société** | Grégoire Wallenborn (Coordinator) and Eric MURAILLE

5 credits [lecture: 48h] 📅 second term 🗨 French

ETHI-F301  
(option/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  
(option/optional)

**Langages de programmation 2** | John IACONO (Coordinator)

5 credits [lecture: 24h, practical work: 24h, project: 30h] 📅 first term 🗨 French

INFO-F305  
(option/optional)

**Modélisation et simulation** | Gianluca BONTEMPI (Coordinator)

5 credits [lecture: 30h, tutorial classes: 24h, project: 6h] 📅 first term 🗨 French

INFO-H303  
(option/optional)

**Bases de données** | Esteban ZIMANYI (Coordinator)

5 credits [lecture: 24h, tutorial classes: 24h, practical work: 12h] 📅 second term 🗨 French

PHYS-F103  
(option/optional)

**Physique** | Alain JORISSEN (Coordinator)

5 credits [lecture: 36h, tutorial classes: 24h] 📅 second term 🗨 French



PHYS-F517  
(option/optional)

**How To Make (almost) Any Experiment Using Digital Fabrication** | Denis TERWAGNE (Coordinator)

5 credits [lecture: 24h, practical work: 24h]  first term  French

## Module Mathématique - Physique | B1-MATH-P

### Bloc 1

## Mathématique et physique

INFO-F206  
(option)

**Informatique** | Olivier MARKOWITCH (Coordinator)

5 credits [lecture: 24h, tutorial classes: 12h, project: 24h]  first term  French

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

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** | Denis BONHEURE (Coordinator) and Clément Cerovecki

5 credits [lecture: 24h, tutorial classes: 24h]  first term  French

## Options de la filière physique

*A total of five credits chosen from the following*

BIOL-F102  
(option/optional)

**Biologie générale** | Patrick MARDULYN (Coordinator) and Etienne MEYLAN

5 credits [lecture: 48h]  second term  French

CHIM-F101  
(option/optional)

**Chimie générale** | Laurence RONGY (Coordinator), François RENIERS and Thierry VISART DE BOCARME

5 credits [lecture: 40h, tutorial classes: 20h, project: 15h]  first term  French

ETHI-F201  
(option/optional)

**Sciences, éthique, histoire et société** | Grégoire Wallenborn (Coordinator) and Eric MURAILLE

5 credits [lecture: 48h]  second term  French

ETHI-F301  
(option/optional)

**Science et Société : analyse de controverses scientifiques** | Patrick MARDULYN (Coordinator) and Grégoire Wallenborn

5 credits [lecture: 24h, project: 70h]  first term  French



INFO-F302  
(option/optional)

**Informatique fondamentale** | Emmanuel FILIOT (Coordinator)

5 credits [lecture: 36h, tutorial classes: 12h, project: 30h]  first term  French

PHYS-F201  
(option/optional)

**Thermodynamique** | Nicolas CHAMEL (Coordinator)

5 credits [lecture: 36h, tutorial classes: 24h]  second term  French

PHYS-F203  
(option/optional)

**Introduction à la mécanique quantique** | Serge MASSAR (Coordinator)

5 credits [lecture: 30h, tutorial classes: 30h]  second term  French

PHYS-F517  
(option/optional)

**How To Make (almost) Any Experiment Using Digital Fabrication** | Denis TERWAGNE (Coordinator)

5 credits [lecture: 24h, practical work: 24h]  first term  French

