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Introduction

Introduction

Introduction

The aim of the in-depth minor in mathematics is to offer learning that is supplementary to the discipline of the Bachelor's major. The very wide range of courses has been devised for students of the Bachelor in Mathematics

- who wish to supplement their Bachelor course with courses that remain within the field of mathematics, and/or
- who wish to supplement their Bachelor course with courses close to mathematics but who do not wish to undertake a single-topic minor (minor in computer science, in physics, in engineering science, applied mathematics, etc.).

Teaching profile

Learning outcomes

The in-depth minor in mathematics contributes to the acquisition of the knowledge and skills appropriate to the Bachelor of Mathematics:

- disciplinary basics needed to pursue studies in mathematics or in closely related fields.
- capacity for abstract thought and critical spirit
- skills in scientific communication
- independent learning

These skills are detailed in the presentation of the programme for the Bachelor in Mathematics. Depending on the courses chosen, the student will have acquired supplementary training in closely related disciplines (physics, statistics and probability, economics, computing, applied mathematics). These courses help to develop the capacity for the analysis, in depth and from a variety of points of view, of a mathematical problem or a complex system belonging to scientific disciplines other than mathematics, in order to extract the essential features and to relate them to the most suitable theoretical tools.

Detailed programme

PROGRAMME BY SUBJECT

- | | |
|--|--|
| <ul style="list-style-type: none"> ○ Mandatory △ Courses not taught during 2015-2016 ⊕ Periodic courses taught during 2015-2016 | <ul style="list-style-type: none"> ⊗ Optional ⊖ Periodic courses not taught during 2015-2016 ■ Activity with requisites |
|--|--|

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

Year
2 3

○ Cours au choix (30 credits)

From the following courses, students choose 10 credits in the second year and 20 credits in the third year, in agreement with their study adviser.

⊗ LMAT1235	Some notions of mathematical logic	Tim Van der Linden	30h+15h	5 Credits	2q	X	
⊗ LMAT1341	Courbes algébriques	Luc Haine	30h	3 Credits	1q		X
⊗ LMAT2440	Number theory	Olivier Pereira, Jean-Pierre Tignol	30h+15h	5 Credits	1q		X
⊗ LMAT2450	Cryptography	Olivier Pereira	30h+15h	5 Credits	1q		X
⊗ LMAT2460	Finite mathematics and combinatorial structures	Jean-Charles Delvenne, Jean-Pierre Tignol	30h	5 Credits	1q		X
⊗ LSC2002	Elements of mathematics and physics history	Patricia De Grave, Michel Willem	30h	4 Credits	1q	X	
⊗ LPHY1211	General Physics 3	Jan Govaerts, Vincent Lemaitre	30h+30h	4 Credits	1q	X	
⊗ LPHY1221	Group theory	Philippe Ruelle	22.5h +15h	5 Credits	2q		X
⊗ LPHY1222	Quantum Physics	Fabio Maltoni	30h+30h	5 Credits	2q	X	X
⊗ LPHY1223	Special Relativity	Jean-Marc Gérard	22.5h +15h	4 Credits	1q	X	
⊗ LPHY1224	Méthodes mathématiques pour la physique	Christian Hagendorf, Christophe Ringeval	15h+30h	4 Credits	1q		X
⊗ LPHY1261	Astronomy and geophysics	Véronique Dehant (coord.), Patricia Lampens	15h+7.5h	2 Credits	2q	X	X
⊗ LPHY1322	Quantum Physics 2	Christophe Ringeval	45h +22.5h	6 Credits	1q		X
⊗ LSTAT2130	Introduction to Bayesian statistics.	Philippe Lambert	15h+5h	4 Credits	2q		X
⊗ LINGE1221	Econometrics	Sébastien Van Belleghem	30h+15h	5 Credits	2q		X
⊗ LPHY1271	Computer Science and Numerical Methods	Giacomo Bruno	15h+30h	4 Credits	1q	X	X

							Year	
							2	3
⊗ LSINF1101	Introduction to programming	Olivier Bonaventure, Charles Pecheur	30h+30h	6 Credits	1q	X		
⊗ LSINF1103	Algorithmics	Pierre Dupont	30h+30h	6 Credits	2q	X		
⊗ LINGI1101	Discrete mathematics: logical foundations of computing science	Peter Van Roy	30h+30h	5 Credits	1q	X	X	
⊗ LINGI1123	Computability and complexity	Yves Deville	30h+30h	5 Credits	2q	X	X	
⊗ LINMA1702	Applied mathematics : Optimization I	François Glineur	30h +22.5h	5 Credits	2q	X	X	
⊗ LINMA1731	Stochastic processes : Estimation and prediction	Pierre-Antoine Absil, Luc Vandendorpe (coord.)	30h+30h	5 Credits	2q	X	X	
⊗ LSTAT2040	Statistical analysis	Anouar El Ghouch, Ingrid Van Keilegom	30h+15h	5 Credits	2q	X	X	
⊗ LINMA1691	Discrete mathematics - Graph theory and algorithms	Vincent Blondel, Jean-Charles Delvenne (compensates Vincent Blondel)	30h +22.5h	5 Credits	1q	X	X	

COURSE PREREQUISITES

A document entitled [en-prerequis-2015-app-lmath100p.pdf](#) specifies the activities (course units - CU) with one or more pre-requisite(s) within the study programme, that is the CU whose learning outcomes must have been certified and for which the credits must have been granted by the jury before the student is authorised to sign up for that activity.

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

As the prerequisites are a requirement of enrolment, there are none within a year of a course.

The prerequisites are defined for the CUs for different years and therefore influence the order in which the student can enrol in the programme's CUs.

In addition, when the panel validates a student's individual programme at the beginning of the year, it ensures the consistency of the individual programme:

- It can change a prerequisite into a corequisite within a single year (to allow studies to be continued with an adequate annual load);
- It can require the student to combine enrolment in two separate CUs it considers necessary for educational purposes.

For more information, please consult [regulation of studies and exams](#).

THE PROGRAMME'S COURSES AND LEARNING OUTCOMES

For each UCL training programme, a [reference framework of learning outcomes](#) specifies the competences expected of every graduate on completion of the programme. You can see the contribution of each teaching unit to the programme's reference framework of learning outcomes in the document "In which teaching units are the competences and learning outcomes in the programme's reference framework developed and mastered by the student?"

The document is available by clicking [this link](#) after being authenticated with UCL account.

Information

Liste des bacheliers proposant cette mineure

> [Bachelor in Mathematics](#) [en-prog-2015-math1ba]

Admission

This minor is accessible from the second year, only to students enrolled in the Bachelor of Mathematics programme.

Possible trainings at the end of the programme

The in-depth minor in mathematics supplements the training of Bachelor of Mathematics students.

The Bachelor in Mathematics has access to the following programmes:

- master 120 in mathematics, research or teaching focus;
- master 60 in mathematics;
- master in statistics, general or biostatistics;
- master in actuarial science.

Contacts

Curriculum Management

Entite de la structure MATH

Acronyme	MATH
Dénomination	Ecole de mathématique
Adresse	Chemin du Cyclotron 2 bte L7.01.02 1348 Louvain-la-Neuve Tél 010 47 31 52 - Fax 010 47 25 30
Site web	https://www.uclouvain.be/math
Secteur	Secteur des sciences et technologies (SST)
Faculté	Faculté des sciences (SC)
Commission de programme	Ecole de mathématique (MATH)

Academic Supervisor : [Enrico Vitale](#)

Jury:

Usefull Contacts

Secrétaire de l'Ecole de mathématique : [Roseline Van Dyck](#)

Infos
