UCLouvain

MATH2M4

2026 - 2027

Master [120] of Education, Section 4 : Mathematics

At Louvain-la-Neuve - 120 credits - 2 years - Day schedule - In French
Dissertation/Graduation Project : **YES** - Internship : **YES**
Activities in English: **NO** - Activities in other languages : **NO**
Activities on other sites : **NO**
Main study domain : **Sciences de l'éducation et Enseignement**
Organized by: **Faculty of Science (SC)**
Programme acronym: **MATH2M4**

Table of contents

MATH2M4 - Introduction

Introduction

MATH2M4 - Teaching profile

Learning outcomes

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

1

2

3

4

MATH2M4 Programme

Detailed programme by subject

CORE COURSES

- O Mandatory
- ⊠ Optional
- △ Not offered in 2026-2027
- ⊘ Not offered in 2026-2027 but offered the following year
- ⊕ Offered in 2026-2027 but not the following year
- △ ⊕ Not offered in 2026-2027 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...)

				Year 1	Year 2
O Didactique et pédagogie (25 credits)					
O Un cours parmi :					
⊠ LEISS2101	General pedagogy *Cours dispensé à LLN en horaire de jour*		FR [q1] [37.5h] [5 Credits]	x	
⊠ LEISS2102	General pedagogy *Cours dispensé à LLN en horaire décalé*		FR [q1] [37.5h] [5 Credits]	x	
⊠ MEISS2103	General pedagogy *Cours dispensé à Mons en horaire décalé*		FR [q1] [30h] [5 Credits]	x	
O LEISS2107	School and diversities		FR [q1] [22.5h+15h] [5 Credits]		x
O LMAT2360	Teaching and learning core mathematics		FR [q1] [37.5h] [5 Credits]	x	
O LMAT2320A	Didactics and epistemology of mathematics - Part A (general questions)		FR [q1] [22.5h+7.5h] [3 Credits]		x
O LMAT2320B	Didactics and epistemology of mathematics - Part B (specialised questions)		FR [q2] [22.5h+7.5h] [3 Credits]		x
O LMAT2330	Seminar on the teaching of mathematics	Enrico Vitale	FR [q1+q2] [15h+30h] [4 Credits]		x

				Year 1	Year 2
⊠ En remplacement de LMAT2330 *En fonction de la formation précédente et de l'expérience professionnelle, l'étudiant peut faire une demande au jury pour remplacer le cours LMAT2330 par un des cours suivants :*					
⊠ LMAT2335	Mathematical didactics workshop	Laure Ninove	FR [q1+q2] [0h+45h] [5 Credits]	x	x
⊠ LPHYS2320C	Didactics ans epistemology of science and physics - D2 and listening internship		FR [q1] [22.5h+7.5h] [4 Credits]		x

Sciences humaines et sociales (15 credits)

Un cours parmi :

⊠ LEISS2201	Developmental and learning psychology *Cours dispensé à LLN en horaire de jour*	Véronique Leroy (compensates Baptiste Barbot) Nathalie Roland Morgane Senden	FR [q2] [37.5h+15h] [4 Credits]	x	
⊠ LEISS2202	Developmental and learning psychology *Cours dispensé à LLN en horaire décalé*	Véronique Leroy Nathalie Roland Morgane Senden	FR [q2] [37.5h+15h] [4 Credits]	x	

Un cours parmi :

⊠ LEISS2203	Social, cultural, and political approaches to education *Cours dispensé à LLN en horaire de jour*	Branka Cattonar Vincent Dupriez	FR [q2] [37.5h+15h] [4 Credits]	x	
⊠ LEISS2204	Social, cultural, and political approaches to education *Cours dispensé à LLN en horaire décalé*	Branka Cattonar Vincent Dupriez	FR [q2] [37.5h+15h] [4 Credits]	x	

Un cours parmi :

⊠ LEISS2205	Ethics of education, neutrality, and citizenship *Cours dispensé à LLN en horaire de jour*	Hervé Pourtois	FR [q2] [22.5h] [2 Credits]	x	
⊠ LEISS2206	Ethics of education, neutrality, and citizenship *Cours dispensé à LLN en horaire décalé*	John Pitseys	FR [q2] [22.5h] [2 Credits]	x	

Un cours parmi :

⊠ LEISS2104	Communication in school contexts *Cours dispensé à LLN en horaire de jour*		FR [q1] [22.5h+15h] [5 Credits]	x	
⊠ LEISS2105	Communication in school contexts *Cours dispensé à LLN en horaire décalé*		FR [q1] [22.5h+15h] [5 Credits]	x	
⊠ MEISS2106	Communication in school contexts *Cours dispensé à Mons en horaire décalé*		FR [q1] [15h+15h] [5 Credits]	x	

Stages (20 credits)

LMAT2370	Observation internship in common core mathematics (24 hours) and support seminar		FR [q1] [15h] [5 Credits]	x	
LMAT2350	Long internship (125 hours) and accompanying seminar in mathematics [M]		FR [q1+q2] [45h+22.5h] [15 Credits]		x

Formation disciplinaire (40 credits)

LMAT2170	History and epistemology of mathematics	Pierre Bieliavsky Pierre-Emmanuel Caprace Marino Gran Jean Van Schaftingen	FR [q1] [30h+15h] [5 Credits]	x	

Au moins un cours parmi :

⊠ LMAT2335	Mathematical didactics workshop	Laure Ninove	FR [q1+q2] [0h+45h] [5 Credits]	x	x
⊠ LPHYS2320C	Didactics ans epistemology of science and physics - D2 and listening internship		FR [q1] [22.5h+7.5h] [4 Credits]		x

⊠ Formation fondamentale en mathématiques
L'étudiant·e suit obligatoirement les cours suivants, s'il ou elle n'a pas crédité ces cours ou ces de cours équivalents dans un autre programme.

⊠ LMAT1222	Complex analysis 1	Tom Claeys	FR [q2] [30h+15h] [5 Credits] *> English-friendly*	x	

				Year 1	2
⛒ LMAT1241	Geometry II	Pierre Bieliavsky	FR [q2] [45h+30h] [6 Credits] > English-friendly	x	

⛒ Un cours de logique (cours bisannuels) parmi :

⛒ LMAT1236	Introduction to logic: set theory	Tim Van der Linden	FR [q2] [30h+15h] [5 Credits] ∅ > English-friendly	x	x
⛒ LMAT1237	Introduction to logic: model theory	Enrico Vitale	FR [q2] [30h+15h] [5 Credits] ⊕ > English-friendly	x	x

⛒ Formation approfondie en mathématiques
L'étudiant·e complète son programme en choisissant parmi les cours suivants :

⛒ LMAT1322	Real and harmonic analysis	Augusto Ponce	FR [q2] [30h+30h] [5 Credits] > English-friendly	x	x
⛒ LMAT1331	Commutative algebra	Enrico Vitale	FR [q1] [30h+15h] [5 Credits]	x	x
⛒ LMAT1342	Geometry 3	Pascal Lambrechts	FR [q1] [30h+30h] [5 Credits] > English-friendly	x	x
⛒ LMAT1361	Galois Theory	Pierre-Emmanuel Caprace	FR [q2] [30h+15h] [5 Credits]	x	x
⛒ LMAT1371	Probability Theory	Karim Barigou	FR [q2] [30h+22.5h] [5 Credits]	x	x

⛒ Formation spécialisée en mathématiques
L'inscription aux cours de la Formation spécialisée est conditionnée par le fait d'avoir validé ou d'être inscrit à minimum 40 crédits de cours des sections «Formation fondamentale» et «Formation approfondie» . Cette condition peut être remplie préalablement (dans un programme précédent) et/ou en parallèle de l'inscription aux cours de la Formation spécialisée.

⛒ LMAT1223	Differential equations	Heiner Olbermann	FR [q2] [30h+15h] [5 Credits] > English-friendly	x	x
⛒ LINMA1691	Discrete mathematics - Graph theory and algorithms	Vincent Blondel Jean-Charles Delvenne	FR [q1] [30h+22.5h] [5 Credits]	x	x
⛒ LINMA1702	Optimization models and methods I	François Glineur	FR [q2] [30h+22.5h] [5 Credits]	x	x
⛒ LINFO1103	Introduction to algorithms	Pierre Dupont	FR [q2] [30h+30h] [5 Credits]	x	x
⛒ LINFO1123	Calculability and Complexity	Charles Pecheur	FR [q2] [30h+30h] [5 Credits]	x	x
⛒ LMAT2120	Groups theory	Pierre-Emmanuel Caprace	FR [q1] [30h+15h] [5 Credits] ∅ > English-friendly	x	x
⛒ LMAT2130	Partial differential equations	Heiner Olbermann	EN [q1] [30h+15h] [5 Credits]	x	x
⛒ LMAT2140	Algebraic topology	Pascal Lambrechts	EN [q1] [30h+15h] [5 Credits] ⊕	x	x
⛒ LMAT2150	Category theory	Marino Gran	EN [q1] [30h+15h] [5 Credits] > French-friendly	x	x
⛒ LMAT2215	Homological algebra	Tim Van der Linden	EN [q1] [30h+15h] [5 Credits] ⊕ > French-friendly	x	x
⛒ LMAT2221	Universal algebra	Enrico Vitale	FR [q2] [30h+15h] [5 Credits] ∅ > English-friendly	x	x
⛒ LMAT2240	Low-dimensional topology	Pedro Dos Santos Santana Forte Vaz	EN [q2] [30h+15h] [5 Credits] ∅	x	x
⛒ LMAT2250	Calculus of variations	Augusto Ponce	FR [q2] [30h+15h] [5 Credits] ⊕ > English-friendly	x	x
⛒ LMAT2266	Lie Theory	Timothée Marquis	FR [q1] [30h+15h] [5 Credits] ⊕	x	x
⛒ LMAT2415	Advanced harmonic analysis		FR [q1] [30h+15h] [5 Credits] △	x	x
⛒ LMAT2420	Complex analysis	Tom Claeys	EN [q2] [30h+15h] [5 Credits] > French-friendly	x	x
⛒ LMAT2430	Lie's therory elements and differential geometry	Pierre Bieliavsky	FR [q2] [30h+15h] [5 Credits]	x	x
⛒ LMAT2440	Number theory	Pierre-Emmanuel Caprace Olivier Pereira	FR [q2] [30h+15h] [5 Credits] > English-friendly	x	x

⛒ Formation multidisciplinaire
L'étudiant·e ayant déjà crédité au total (dans un autre programme et/ou dans ce programme) au moins 50 crédits des cours des blocs «Formation fondamentale», «Formation approfondie» et «Formation spécialisée» peut inscrire au plus 10 crédits parmi les cours suivants :

⛒ LPHYS1111	Mechanics 1	Giacomo Bruno Justin Janquart	FR [q1] [52.5h+52.5h] [9 Credits]	x	x
⛒ LPHYS1221	Electromagnetism 1	Gwenhaël de Wasseige Vincent Lemaitre	FR [q1] [52.5h+52.5h] [10 Credits]	x	x

				Year 1	2
⊠ LBIO1110	Life : diversity and evolution	Patrick Dumont François Renoz	FR [q1] [30h+10h] [4 Credits]	x	x
⊠ LCHM1112	General Chemistry	Yaroslav Filinchuk	FR [q1] [30h+22.5h] [5 Credits]	x	x
⊠ LGEO1111	Earth and society : perspectives from geography	Eric Lambin	FR [q2] [30h+15h] [5 Credits]	x	x
⊠ LESPO1118	Economic Policy	Tanguy Isaac Arastou Khatibi	FR [q1] [30h+10h] [6 Credits]	x	x
⊠ LCHM2320C	Didactics and epistemology of science and chemistry - D2 and listening internship		FR [q1] [15h+15h] [4 Credits]		x
⊠ LBIO2320C	Didactics and epistemology of science and biology - D2 and listening internship		FR [q1] [22.5h+7.5h] [4 Credits]		x
⊠ LGEO2320C	Didactics and epistemology of geography - Part A (general questions) and listening session		FR [q1] [22.5h+7.5h] [4 Credits]		x
⊠ LAGES2301	Didactique des sciences économiques	Olivier Kahnes	FR [q1] [45h+15h] [8 Credits]		x

Recherche et intégration (20 credits)

Les trois UE doivent obligatoirement être suivies la même année.

LEISS2902	Introduction to educational research *Cours dispensé à LLN en horaire de jour*	Stéphane Colognesi	FR [q1] [15h] [2 Credits]		x
LSCI2350	Master thesis		FR [q1+q2] [] [15 Credits]		x

Séminaire d'accompagnement au choix

⊠ LSCI2351	Master thesis support seminar	Myriam De Kesel Gabriel Dias de Carvalho Junior Laure Ninove	FR [q1+q2] [22.5h+22.5h] [3 Credits]		x
⊠ LEISS2903	Master's thesis support seminar		FR [q1+q2] [22.5h+22.5h] [3 Credits]		x
⊠ LEISS2904	Séminaire transversal d'accompagnement du mémoire - 2		FR [q1+q2] [22.5h+22.5h] [3 Credits]		x

Maîtrise de la langue française

Une épreuve liminaire de maîtrise de la langue française (EMLF) devra être présentée par les étudiants inscrits en master en enseignement (section 4 et section 5). Cet examen OBLIGATOIRE est généralement organisé le 3e mardi d'octobre. Le seuil de réussite de l'examen est fixé à 10/20. En cas d'échec, l'étudiant.e se verra ajouter à son PAE une UE de 5 crédits portant sur la maîtrise de la langue française. Il ne pourra en aucun cas être diplômé si cette UE n'est pas réussie. Inscription à l'épreuve liminaire via la plateforme de l'EMLF. *Pour plus d'information*

From 0 to 5credit(s)

LEISS2207	French language mastery for teaching *L'UE sera retirée du programme annuel de l'étudiant en cas de réussite de l'épreuve liminaire*	Caroline Scheepers	FR [q2] [37.5h+7.5h] [5 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.

- Mandatory
- Optional
- Not offered in 2026-2027
- Not offered in 2026-2027 but offered the following year
- Offered in 2026-2027 but not the following year
- Not offered in 2026-2027 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...)

LMAT1122	Mathematical analysis : differentiation	Augusto Ponce	FR [q2] [45h+45h] [8 Credits]
LMAT1141	Geometry I	Pascal Lambrechts	FR [q2] [45h+30h] [7 Credits]
LMAT1271	Calculation of probability and statistical analysis	Anna Kiriliouk	FR [q2] [30h+30h] [6 Credits] *> English-friendly*
LMAT1221	Mathematical analysis : integration	Heiner Olbermann	FR [q1] [30h+30h] [5 Credits] *> English-friendly*
LMAT1231	Multilinear algebra and group theory	Pierre-Emmanuel Caprace	FR [q1] [30h+30h] [5 Credits] *> English-friendly*
LMAT1323	Topology	Pedro Dos Santos Santana Forte Vaz	FR [q1] [30h+15h] [5 Credits] *> English-friendly*
LANG1861	English: reading and listening comprehension of scientific texts	Catherine Avery (coord.) Ariane Halleux Marc Piwnik	EN [q2] [10h] [2 Credits]

Un cours parmi :

LINFO1101	Introduction to programming	Kim Mens Charles Pecheur Cristel Pelsser	FR [q1] [30h+30h] [5 Credits]
LMAT1151	Numerical analysis : tools and software of calculus	Jean Van Schaftingen	FR [q1] [30h+45h] [5 Credits] *> English-friendly*

Course prerequisites

There are no prerequisites between course units (CUs) for this programme, i.e. the programme activity (course unit, CU) whose learning outcomes are to be certified and the corresponding credits awarded by the jury before registration in another CU.

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.

MATH2M4 - Information

Access Requirements

SUMMARY

University Bachelors

Diploma	Special Requirements	Access	Remarks
UCLouvain Bachelors			
		Direct access	
		Access with additional training	
		Access based on application	
		Access based on application	
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		Access based on application	
Others Bachelors of the French speaking Community of Belgium			
		Direct access	
		Access with additional training	
		Access based on application	
		Access based on application	
		Access based on application	
		Access based on application	
		Access based on application	
		Access based on application	
		Access based on application	
		Access based on application	

	Access based on application
Bachelors of the Dutch speaking Community of Belgium	
Foreign Bachelors	

Non university Bachelors

Holders of a 2nd cycle University degree

Diploma	Special Requirements	Access	Remarks
"Licenciés"			
Masters			

Access based on validation of professional experience

Access based on application

Admission and Enrolment Procedures for general registration

Evaluation

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