UCLouvain

PHYS2M4

2026 - 2027

Master [120] of Education, Section 4 : Physics

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: **PHYS2M4**

Table of contents

PHYS2M4 - Introduction

Introduction

PHYS2M4 - Teaching profile

Learning outcomes

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

1

2

3

4

PHYS2M4 Programme

Detailed programme by subject

CORE COURSES

- 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
Didactique et pédagogie (25 credits)					
Un cours parmi :					
Optional LEISS2101	General pedagogy *Cours dispensé à LLN en horaire de jour*		FR [q1] [37.5h] [5 Credits]	x	
Optional LEISS2102	General pedagogy *Cours dispensé à LLN en horaire décalé*		FR [q1] [37.5h] [5 Credits]	x	
Optional MEISS2103	General pedagogy *Cours dispensé à Mons en horaire décalé*		FR [q1] [30h] [5 Credits]	x	
Mandatory LEISS2107	School and diversities		FR [q1] [22.5h+15h] [5 Credits]		x
Mandatory LSCI2360	Teaching and learning core sciences		FR [q1] [37.5h] [5 Credits]	x	
Mandatory LPHYS2320A	Didactics ans epistemology of science and physics - D2		FR [q1] [22.5h+7.5h] [3 Credits]		x
Mandatory LPHYS2320B	Didactics ans epistemology of science and physics - D3		FR [q2] [22.5h+7.5h] [3 Credits]		x
Un cours parmi :					
Optional LMAT2320C	Didactics and epistemology of mathematics		FR [q1] [22.5h+7.5h] [4 Credits]		x
Optional LCHM2320D	Didactics and epistemology of science and chemistry		FR [q1+q2] [20h+20h] [4 Credits]		x

				Year 1	2
⊠ LBIO2320D	Didactics and epistemology of science and biology		FR [q1+q2] [30h] [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*		EN [q1] [15h+15h] [5 Credits]	x	

Stages (20 credits)

LSCI2370	Observation internship in common core sciences (24 hours) and support seminar		FR [q1] [15h] [5 Credits]	x	
LPHYS2350	Long internship (125 hours) and accompanying seminar in physics and science [M]		FR [q1+q2] [45h+22.5h] [15 Credits]		x

Formation disciplinaire (40 credits)

20 à 40 crédits parmi :

⊠ LPHYS2102	Ionizing Radiation Detection and Nuclear Instrumentation	Eduardo Cortina Gil	EN [q1+q2] [26h+26h] [6 Credits]	x	x
⊠ LPHYS2103	Analog electronics	Eduardo Cortina Gil	EN [q1] [22.5h+22.5h] [5 Credits] *> French-friendly*	x	x
⊠ LPHYS2104	Data acquisition, digital electronics and microelectronics	Eduardo Cortina Gil	EN [q1] [22.5h+22.5h] [5 Credits] *> French-friendly*	x	x
⊠ LPHYS2112	Mathematical physics	Christian Walmsley Hagendorf	EN [q1] [30h] [5 Credits] *> French-friendly*	x	x
⊠ LPHYS2113	Critical phenomena	Philippe Ruelle	EN [q1] [22.5h+7.5h] [5 Credits] *> French-friendly*	x	x
⊠ LPHYS2122	Cosmology	Christophe Ringeval	EN [q1] [30h] [5 Credits] *> French-friendly*	x	x
⊠ LPHYS2131	Fundamental interactions and elementary particles	Agni Bethani Céline Degrande Christophe Delaere	EN [q1] [52.5h+7.5h] [10 Credits] *> French-friendly*	x	x
⊠ LPHYS2132	Quantum field theory 1	Céline Degrande Marco Drewes	EN [q1] [52.5h+7.5h] [10 Credits] *> French-friendly*	x	x
⊠ LPHYS2141	Introduction to quantum optics	Matthieu Génévriez Xavier Urbain	EN [q1] [22.5h+7.5h] [5 Credits] *> French-friendly*	x	x
⊠ LPHYS2143	Optics and lasers	Clément Lauzin	EN [q1] [22.5h+22.5h] [5 Credits] *> French-friendly*	x	x

				Year 1	2
⊠ LPHYS2161	Internal geophysics of the Earth and planets	Jérémy Rekier	EN [q1] [22.5h+7.5h] [5 Credits] > *French-friendly*	x	x
⊠ LPHYS2162	Introduction to the physics of the climate system and its modelling	Hugues Goosse François Massonnet	EN [q1] [22.5h+22.5h] [5 Credits] > *French-friendly*	x	x
⊠ LPHYS2163	Atmosphere and ocean : physics and dynamics	Thierry Fichefet François Massonnet	EN [q1] [52.5h+7.5h] [10 Credits] > *French-friendly*	x	x

O à 20 crédits parmi :

Ces UEs peuvent être suivies si elles n'ont pas été suivies durant le parcours antérieur.

⊠ LPHYS1214	Astronomy and geophysics	Gwenhaël de Wasseige Jérémy Rekier	FR [q2] [22.5h+15h] [5 Credits]	x	x
⊠ LPHYS1322	Electromagnetism 2	Céline Degrande	FR [q1] [37.5h+22.5h] [5 Credits] > *English-friendly*	x	x
⊠ LPHYS2124	General Relativity	Christophe Ringeval	FR [q1] [30h+22.5h] [5 Credits] > *English-friendly*	x	x
⊠ LPHYS1342	Quantum Physics 2	Christophe Ringeval	FR [q1] [45h+22.5h] [5 Credits] > *English-friendly*	x	x
⊠ LPHYS1343	Statistical physics	Christian Walmsley Hagendorf	FR [q2] [45h+30h] [6 Credits] > *English-friendly*	x	x
⊠ LPHYS1345	Solid state physics	Eduardo Cortina Gil	FR [q2] [26h+26h] [5 Credits] > *English-friendly*	x	x
⊠ LPHYS1347	Physique atomique et moléculaire	Matthieu Génévriez Clément Lauzin	FR [q2] [26h+26h] [5 Credits]	x	x

0 à 10 crédits parmi :

⊠ LBIO1110	Life : diversity and evolution	Patrick Dumont François Renoz	FR [q1] [30h+10h] [4 Credits]	x	x
⊠ LESPO1118	Economic Policy	Tanguy Isaac Arastou Khatibi	FR [q1] [30h+10h] [6 Credits]	x	x
⊠ LGEO1111	Earth and society : perspectives from geography	Eric Lambin	FR [q2] [30h+15h] [5 Credits]	x	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.

- O Mandatory
- ⛒ Optional
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- ⊘ 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
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Click on the course title to see detailed informations (objectives, methods, evaluation...)

⛒ LMAT1222	Complex analysis 1	Tom Claeys	FR [q2] [30h+15h] [5 Credits] ⊕ *> English-friendly*
⛒ LMAT1261	Lagrangian and Hamiltonian mechanics	Christian Walmsley Hagendorf	FR [q1] [22.5h+30h] [5 Credits] ⊕ *> English-friendly*
⛒ LPHYS1213	Physics of fluids	Michel Crucifix Eric Deleersnijder	FR [q2] [37.5h+30h] [5 Credits] ⊕

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.

PHYS2M4 - Information

Access Requirements

SUMMARY

University Bachelors

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