

**At Louvain-la-Neuve - 120 credits - 2 years - Day schedule - In French**

Dissertation/Graduation Project : **YES** - Internship : **optional**

Activities in English: **YES**



## CLIM2M - Teaching profile

### Learning outcomes

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The objective of the training is partly an introduction to the three fundamental aspects of the work of a geographer:

- to observe and describe the environment, especially with computerized databases and advanced satellite observation technology ;
- to understand and explain the processes that have been observed, especially by applying models which enable them to be simulated;
- to learn certain concepts in resource management through land development ;

and partly an introduction to the fundamental concepts of physical climatology:

- to understand the dynamics of the atmosphere, the ocean and the overall climatological system;
- to grasp the techniques for modelling the climate, covering both theoretical and technical aspects;
- to be able to analyse and interpret climatic data.

This twin focus enables students to make a critical analysis of issues related to climate change (past and future and to understand and anticipate their impact on the environment and society so they can become responsible players in the current situation. The Master in Geography : Climatology is also suitable preparation for a doctoral thesis.

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

Se préparer à la vie professionnelle

1. Intervenir dans la gestion des ressources
- 2 Evaluer des projets
- 3 Développer des outils d'aide à la décision

Modéliser les processus observés dans la réalité

Identifier les caractéristiques/composantes du système et la manière dont elles interagissent

Formuler des hypothèses/tests de travail

Développer des modèles (statistiques, numériques, conceptuels)

Tester par l'application, calibration et validation

Interpréter les résultats en lien avec la problématique

Porter un regard critique sur les méthodes utilisées

- 8.4. Concevoir des solutions dans le domaine de la gestion des ressources et de l'aménagement du territoire.
- 8.5 Tester les solutions et évaluer les impacts suivant des objectifs de développement durable.
9. Mobiliser les compétences nécessaires pour réaliser un travail de recherche en climatologie.
- 9.1. Comprendre la dynamique de l'atmosphère, de l'océan, et du système climatologique dans son ensemble.
- 9.2. Appréhender les techniques de modélisation du climat, en couvrant les aspects théoriques et techniques.
- 9.3. Savoir analyser et interpréter des données climatiques.
- 9.4. Mener une analyse critique sur des questions liées aux changements climatiques (passés et futurs) et en comprendre et anticiper les impacts sur la société et l'environnement de façon à devenir un acteur responsable dans le monde d'aujourd'hui.

## Programme structure

The programme comprises core subjects of 60 credits, 30 credits for the focus and 30 credits for optional subjects.

## CLIM2M Programme

## Detailed programme by subject

### CORE COURSES [60.0]

- Mandatory
- ✘ Optional
- △ Not offered in 2024-2025
- ⊙ Not offered in 2024-2025 but offered the following year
- ⊕ Offered in 2024-2025 but not the following year
- △ ⊕ Not offered in 2024-2025 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 2

#### Module 1 : Methods for geographical and spatial analyses (10 credits)

● LGEO2211	<a href="#">Advanced statistical methods in geography</a>	Christian Hafner	FR [q1] [30h+30h] [5 Credits] 🌐	X	X
● LGEO2185	<a href="#">Advanced geo-processing</a>	Antoine Stevens (compensates Kristof Van Oost)	FR [q2] [30h+30h] [5 Credits] 🌐	X	X

#### Module 2: Physical geography and global change (10 credits)

● LGEO2140	<a href="#">Global environmental challenges in the Anthropocene</a>	Veerle Vanacker Nathan Vandermaelen (compensates Kristof Van Oost)	FR [q2] [30h+30h] [5 Credits] 🌐	X	X
● LGEO2240	<a href="#">Tectonic geomorphology</a>	Veerle Vanacker	FR [q1] [30h+30h] [5 Credits] 🌐	X	X

#### Module 3 : Human-environment geography and sustainability (10 credits)

● LGEO2110	<a href="#">Mondialisation, développement et environnement</a>	Eric Lambin	FR [q1] [30h+30h] [5 Credits] 🌐	X	
● LGEO2230	<a href="#">Medical and health geography</a>	Sophie Vanwambeke	FR [q1] [30h+30h] [5 Credits] 🌐	X	



## RESEARCH FOCUS [30.0]

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- △ ⊕ Not offered in 2024-2025 or the following year
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Year

1 2

### ○ Content:

○ LGEO2997	Séminaire d'encadrement du mémoire	Michel Crucifix	FR [q1] [15h] [5 Credits] 🌐	X
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## OPTIONAL COURSES

- Mandatory
- ⊗ Optional
- △ Not offered in 2024-2025
- ⊙ Not offered in 2024-2025 but offered the following year
- ⊕ Offered in 2024-2025 but not the following year
- △ ⊕ Not offered in 2024-2025 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...)

These credits are not counted within the 120 required credits.

Year

1 2

### Content:

⊗ LSST1001	IngénieuxSud	Stéphanie Merle Jean-Pierre Raskin	(FR) [q1+q2] [15h+45h] [5 Credits] 🌐	x	x
⊗ LSST1002M	Information and critical thinking - MOOC	Anne Bauwens (compensates Jean-François Rees) Myriam De Kesel	(FR) [q2] [30h+15h] [3 Credits] 🌐	x	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.**

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### Enseignements supplémentaires



## Course prerequisites

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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

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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.



Diploma	Access	Remarks
BA en agronomie, orientation agro-industries et biotechnologies - crédits supplémentaires entre 45 et 60 BA en agronomie, orientation agronomie des régions chaudes - crédits supplémentaires entre 45 et 60 BA en agronomie, orientation environnement - crédits supplémentaires entre 45 et 60 BA en agronomie, orientation forêt et nature - crédits supplémentaires entre 45 et 60 BA en agronomie, orientation systèmes alimentaires durables et locaux - crédits supplémentaires entre 45 et 60 BA en agronomie, orientation techniques et gestion agricoles - crédits supplémentaires entre 45 et 60 BA en agronomie, orientation techniques et gestion horticolas - crédits supplémentaires entre 45 et 60 BA en agronomie, orientation technologie animalière - crédits supplémentaires entre 45 et 60	Les enseignements supplémentaires éventuels peuvent être consultés dans le <a href="#">module complémentaire</a> .	Type court

### Holders of a 2nd cycle University degree

Diploma	Special Requirements	Access	Remarks
<b>"Licenciés"</b>			
Licence en sciences géographiques		Direct access	Ces étudiants ont directement accès à la deuxième année de master avec éventuellement un programme adapté.
<b>Masters</b>			
Tous les masters		Access with additional training	

### Holders of a non-University 2nd cycle degree

#### Access based on validation of professional experience

> It is possible, under certain conditions, to use one's personal and professional experience to enter a university course without having the required qualifications. However, validation of prior experience does not automatically apply to all courses. Find out more about [Validation of priori experience](#).

Accès selon la procédure de validation des acquis de l'expérience  
Consultez le site [www.uclouvain.be/vae](http://www.uclouvain.be/vae)

#### Access based on application

Access based on application : access may be granted either directly or on the condition of completing additional courses of a maximum of 60 ECTS credits, or refused.

The first step in the procedure is to submit a file online ( see <https://uclouvain.be/en/study/inscriptions/futurs-etudiants.html>).

Students who wish to be admitted on the basis of a dossier are invited to consult the [criteria for the evaluation of application](#).

#### Admission and Enrolment Procedures for general registration

## Teaching method

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The teaching strategy takes its inspiration from the idea of "taking responsibility for one's own learning" and offers a wide range of learning situations. The climatologist is at the centre of different scientific fields: physical modeling, teledetection, hydrology and the management of natural resources. The integration between human and physical geography is emphasized. The courses are focused on problems in society: environmental changes, mobility, urbanization, globalization and developing countries. Activities such as seminars and integrated exercises are carried out in advanced areas of geographical research. Ability to use advanced methods of geographical analysis is an important objective of the training: geographical modeling, geographical information systems and satellite teledetection.

Practical work gives students the opportunity of dealing with concrete problems and finding solutions to them, often in small groups. The Master in Climatology is notable for the multidisciplinary background of the teaching staff. Studies will study with lecturers in geography and physics. Activities such as seminars and integrated exercises are designed so that students progressively encounter the complexity of the climatic system. Students in the last year of the Master should therefore be able to use and understand professional climatic modelling systems.

The computer rooms with special software for geographical analysis are always open to students. In the first year of the Master, the field work consists of a week of supervised exercises in the Alps or Spain.

## Evaluation

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