



## GCE2M - Introduction

### Introduction

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#### Introduction

Upon completion of this Master's degree programme, students will have mastered the principles and mathematical methods central to civil and environmental engineering: construction, hydraulics, geotechnology, structures and materials. Moreover, this Master's degree programme provides a wide range of specialisations through elective courses in its main fields.

#### Your profile

You

- Want to understand, model and master natural and built-up spaces while respecting sustainable development as well as design and create structures for a natural environment;
- Are looking for a degree programme that will prepare you to meet future technological challenges facing civil and environmental engineering in an ever changing European and global context;
- Want to develop your innovative spirit and self-initiative as well as develop the necessary tools to complete your projects.

#### Your programme

This Master's degree of de 120 credits as well as den asc962 206.87199402 Tm [(•)] TJ /F1 8 Tf 1 0 0 Tf06en 646962 20advancwillr re95 Tm [on, hydr

## GCE2M - Teaching profile

### Learning outcomes

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Civil engineers are expected to design and construct basic infrastructure for our everyday lives while at the same time respecting and improving the environment.

This Master's degree programme aims to train experts in the field of civil and environmental engineering who will be able to take into account sustainable development, as well as the unique prototype scale of the projects and the complex natural world in which these projects take place.

The future civil engineer will acquire the necessary skills and knowledge to become:

- a professional engineer capable of integrating multiple fields of civil and environmental engineering
- a practical engineer who can use his/her knowledge for solving real-world problems and use appropriate civil engineering tools and techniques, either on construction sites or in design offices



				Year	
				1	2
○ LGCE2990	<b>Graduation project/End of studies project</b> <i>The graduation project can be written and presented in French or English, in consultation with the supervisor. It may be accessible to exchange students by prior agreement between the supervisors and/or the two universities.</i>		EN [q1+q2] [ ] [25 Credits] 🌐		x
○ LEPL2020	<b>Professional integration work</b> <i>The modules of LEPL2020 course are organized over the two annual blocks of the master's degree. It is strongly recommended that students take them from year 1, but they will only be able to register for the course at the earliest the year in which they present their final graduation project.</i> <i>Students who have other professional integration activities in their personal programme, or who can demonstrate an equivalent activity could be exempted from this course. This equivalence is at the discretion of the examination board. Another activity should then be chosen to reach the number of ECTS required for their graduation.</i>		EN [q1+q2] [30h+15h] [2 Credits] Δ 🌐 > French-friendly	x	x

○ Civil and environmental engineering (18 credits)

○ LGCIV2033	<b>Steel and composite steel-concrete structures</b>	Marion Charlier Olivier Vassart	EN [q1] [30h+30h] [5 Credits] 🌐 > French-friendly	x	
○ LGCIV2051	<b>Applied hydraulics : open-channel flows</b>	Sandra Soares Frazao	EN [q1] [30h+30h] [5 Credits] 🌐 > French-friendly	x	
○ LGCIV2041	<b>Numerical analysis of civil engineering structures</b>	Hadrien Rattiez João Saraiva Esteves Pacheco De Alm	EN [q2] [20h+15h] [4 Credits] 🌐 > French-friendly	x	
○ LGCIV2015	<b>Bridges, roads and construction management</b>	Pierre Gilles Colette Grégoire Coraline Guyot Sébastien Houdart	EN [q2] [45h] [4 Credits] 🌐 > French-friendly		

## PROFESSIONAL FOCUS [30.0]

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- 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, ...)

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

Year

1 2

## OPTIONS

The student completes his/her program with options and/or elective courses, including a minimum of 23 ECTS from the courses offered in the "Majors for Master in Civil Engineering" section".

<p>Majors for master in civil engineering</p> <ul style="list-style-type: none"> <li>&gt; Major in geotechnical engineering [ en-prog-2024-gce2m-lgce223o ]</li> <li>&gt; Major in structural engineering [ en-prog-2024-gce2m-lgce226o ]</li> <li>&gt; Major in hydraulic engineering [ en-prog-2024-gce2m-lgce225o ]</li> <li>&gt; Major in architecture [ en-prog-2024-gce2m-lgce227o ]</li> <li>&gt; Major in sustainable construction [ en-prog-2024-gce2m-lgce224o ]</li> <li>&gt; Major in environmental engineering [ en-prog-2024-gce2m-lgce232o ]</li> </ul> <p>Options et cours au choix en connaissances socio-économiques</p> <ul style="list-style-type: none"> <li>&gt; Business risks and opportunities [ en-prog-2024-gce2m-lgce230o ]</li> <li>&gt; Major in Interdisciplinary Program in Entrepreneurship - INEO [ en-prog-2024-gce2m-lgce231o ]</li> <li>&gt; Cours au choix en connaissances socio-économiques [ en-prog-2024-gce2m-lgce200o ]</li> </ul> <p>Other elective courses</p> <ul style="list-style-type: none"> <li>&gt; Other elective courses [ en-prog-2024-gce2m-lgce229o ]</li> </ul>
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## MAJORS FOR MASTER IN CIVIL ENGINEERING

### MAJOR IN GEOTECHNICAL ENGINEERING

- 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...)

L'étudiant-e qui choisit de valider cette option doit sélectionner au minimum 15 crédits parmi les cours proposés.

Year

1 2

#### Content:

				1	2
✘ LGCIV2073	Hydrogeology and Geoenvironment	Hadrien Ratzet	FR [q1] [30h+15h] [5 Credits] 🌐 > French-friendly	X	X
✘ LGCIV2074	Offshore Geotechnics	Benoît Spinewine	FR [q2] [20h+15h] [4 Credits] 🌐 > French-friendly	X	X
✘ LGCIV2076	Geotechnical risks	Jean-François Vanden Berghe	FR [q1] [20h+15h] [4 Credits] 🌐 > French-friendly	X	X
✘ LBIR1336	Soil science and integrated excursions	Yannick Agnan (coord.) Richard Lambert Caroline Vincke	FR [q2] [30h+37.5h] [5 Credits] 🌐 > English-friendly	X	X
✘ LBRES2103	Soil physics applied to Agronomy and Environment	Charles Bielders (coord.) Mathieu Javaux Mathieu Javaux (compensates) Charles Bielders	FR [q1] [30h+15h] [4 Credits] 🌐	X	X





**MAJOR IN HYDRAULIC ENGINEERING**

- 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...)

L'étudiant-e qui choisit de valider cette option doit sélectionner au minimum 15 crédits parmi les cours proposés.

Year

1 2

**Content:**

				1	2
⊗ LGCIV2055	<a href="#">Analysis and mitigation of floods</a>	Sandra Soares Frazao	EN [q1] [20h+15h] [4 Credits] 🌐 > French-friendly	X	X
⊗ LGCIV2053	<a href="#">Fluvial hydraulics</a>	Robin Meurice (compensates Sandra Soares Frazao)	EN [q2] [30h+15h] [5 Credits] 🌐 > French-friendly	X	X
⊗ LGCIV2056	<a href="#">Marine Hydrodynamics</a>	Eric Deleersnijder	EN [q1] [30h+15h] [5 Credits] 🌐 > French-friendly	X	X
⊗ LGCIV2052	<a href="#">Hydropower plants</a>	Sandra Soares Frazao	EN [q2] [20h] [3 Credits] 🌐 > French-friendly	X	X
⊗ LBRES2204	<a href="#">Integrated water management of water resources</a>	Marnik Vanclooster (coord.)	FR [q1] [22.5h+22.5h] [4 Credits] 🌐	X	X
⊗ LBRES2104	<a href="#">IRRIGATION AND DRAINAGE</a>	Mathieu Javaux	FR [q2] [22.5h+22.5h] [4 Credits] 🌐	X	X
⊗ LBRES2105	<a href="#">Soil erosion and conservation</a>	Charles Bielders	EN [q2] [22.5h+22.5h] [4 Credits] △ 🌐 > French-friendly	X	X
⊗ LBRES2206	<a href="#">Advanced Hydrology for Engineers</a>	Mathieu Javaux	EN [q1] [22.5h+15h] [3 Credits] 🌐 > French-friendly	X	X
⊗ LBIRE2233	<a href="#">Integrated project in water and soil resources management</a>	Charles Bielders (coord.) Mathieu Javaux (coord.) Marnik Vanclooster	FR [q1] [40h+8h] [6 Credits] 🌐	X	X

## MAJOR IN ARCHITECTURE

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- Mandatory
  - ✘ Optional
  - △ Not offered in 2024-2025
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## MAJOR IN ENVIRONNEMENTAL ENGINEERING

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- 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, ...)

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

*L'étudiant-e qui choisit de valider cette option doit sélectionner au minimum 15 crédits parmi les cours proposés.*

Year

1 2

### o Content:

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OPTIONS ET COURS AU CHOIX EN CONNAISSANCES SOCIO-ÉCONOMIQUES

**BUSINESS RISKS AND OPPORTUNITIES**

- 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

o **Content:**

				1	2
○ LEPL2211	<a href="#">Business issues introduction</a>	Benoît Gailly	EN [q2] [30h] [3 Credits] 🌐 > French-friendly	x	x
○ LEPL2212	<a href="#">Financial performance indicators</a>	Anne-Catherine Provost	EN [q2] [30h+5h] [4 Credits] 🌐 > French-friendly	x	x
○ LEPL2214					





⊗ LNEER2600





## GCE2M - Information

### Access Requirements

Master course admission requirements are defined by the French Community of Belgium Decree of 7 November 2013 defining the higher education landscape and the academic organisation of courses.

General and specific admission requirements for this programme must be satisfied at the time of enrolling at the university.

Unless explicitly mentioned, the bachelor's, master's and licentiate degrees listed in this table or on this page are to be understood as those issued by an institution of the French, Flemish or German-speaking Community, or by the Royal Military Academy.

**In the event of the divergence between the different linguistic versions of the present conditions, the French version shall prevail.**

#### SUMMARY

- > [General access requirements](#)
- > [Specific access requirements](#)
- > [University Bachelors](#)
- > [Non university Bachelors](#)
- > [Holders of a 2nd cycle University degree](#)
- > [Holders of a non-University 2nd cycle degree](#)
- > [Access based on validation of professional experience](#)
- > [Access based on application](#)
- > [Admission and Enrolment Procedures for general registration](#)

### Specific access requirements

This programme is taught in English with no prerequisite in French. A certificate is required for the holders of a non-Belgian degree, see selection criteria of the Acces on the file.

#### University Bachelors

Diploma	Special Requirements	Access	Remarks
<b>UCLouvain Bachelors</b>			
<a href="#">Bachelor in Engineering</a>		Direct access	Students who have neither major nor minor in the field of their civil engineering Master's degree may have an adapted master programme.
<b>Others Bachelors of the French speaking Community of Belgium</b>			

		degree may have an adapted master programme.
	For others institutions	Access based on application See Personalized Access

## Non university Bachelors

> Find out more about [links](#) to the university

## Holders of a 2nd cycle University degree

Diploma	Special Requirements	Access	Remarks
"Licenciés"			

### Masters

Master in engineering	Direct access
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## 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](#).

### 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 of the admission procedure requires to submit an application online: <https://uclouvain.be/en/study/inscriptions/futurs-etudiants.html>

[Selection criteria are summarized here \(epl-admission@uclouvain.be\)](mailto:epl-admission@uclouvain.be)

## Admission and Enrolment Procedures for general registration



To obtain a passing grade, the marks received for the teaching units are offset by their respective credits.

## **Mobility and/or Internationalisation outlook**

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Over the years, EPL has developed over a hundred partnerships with partners in more than 36 countries (EU and non-EU) to offer exchange programmes to its students. We also offer the possibility of obtaining Double degrees, Joint Degrees or Dual Masters in several fields. The EPL is currently participating in two Erasmus Mundus programmes:

