UCLouvain

GCE2M

2024 - 2025

Master [120] in Civil Engineering

At Louvain-la-Neuve - 120 credits - 2 years - Day schedule - In English
Dissertation/Graduation Project : **YES** - Internship : **YES**
Activities in English: **YES** - Activities in other languages : **optional**
Activities on other sites : **NO**
Main study domain : **Sciences de l'ingénieur et technologie**
Organized by:

GCE2M - Teaching profile

Learning outcomes

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
- a specialist in cutting edge methods used in civil and environmental engineering: construction, hydraulics, geotechnology, structures, materials and environment
- a manager capable of supervising projects alone or contributing as part of a team

The multidisciplinary training offered by the Louvain School of Engineering (EPL) emphasises a combination of theory and practice as well as analysis, design, manufacturing, production, research and development and innovation while never losing sight of issues related to ethics and sustainable development.

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

1.Demonstrate mastery of a solid body of knowledge and skills in basic and engineering science that allows them to solve relevant problems

1.1 Identify and use biomedical engineering concepts, laws and reasoning to solve problems related to civil and environmental engineering:

- Structures: design and calculation (cement, metal, wood, composite materials)
- Geotechnology: soil mechanics, foundations, subterranean drainage
- Hydraulic loads and open channel flow
- Infrastructure projects (bridges, dams, roads, tunnels)

1.2 Identify and use the modelling and calculation tools necessary to solve problems in the fields mentioned above

1.3 Validate problem solving results

2.Organise and carry out an engineering procedure in order to meet a specific need or solve a particular problem

2.1 Analyse all aspects of a problem, sort through available information, identify limits (rules, technical, security, budgetary, human, environmental, etc.) linked to the completion of a civil engineering project in order to write a specifications note

		Year 1	Year 2
LGCE2990	Graduation project/End of studies project *The graduation project can be written and presented in French or English, in consultation with the supervisor. It may be accessible to exchange students*		

ESSIONAL FOCUS [30.0]

- 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

Content:

Compulsory courses (20 credits)

LGCIV2011	Project 1	Pierre Latteur Hadrien Rattez Thomas Vandenbergh Denis Zastavni	EN [q1] [42.5h+40h] [7 Credits] *> French-friendly*	x	
LGCIV2014	Building technology	Sergio Altomonte Pierre Latteur Yvette Pelsser	EN [q1] [30h] [3 Credits] *> French-friendly*	x	
LGCIV2013	Hydraulic structures	Didier Bousmar Sandra Soares Frazao			

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".

Majors for master in civil engineering

> Major in geotechnical engineering *[en-prog-2024-gce2m-lgce223o]*
> Major in structural engineering *[en-prog-2024-gce2m-lgce226o]*
> Major in hydraulic engineering *[en-prog-2024-gce2m-lgce225o]*
> Major in architecture *[en-prog-2024-gce2m-lgce227o]*
> Major in sustainable construction *[en-prog-2024-gce2m-lgce224o]*
> Major in environnemental engineering *[en-prog-2024-gce2m-lgce232o]*

Options et cours au choix en connaissances socio-économiques

> Business risks and opportunities *[en-prog-2024-gce2m-lgce230o]*
> Major in Interdisciplinary Program in Entrepreneurship - INEO *[en-prog-2024-gce2m-lgce231o]*
> Cours au choix en connaissances socio-économiques *[en-prog-2024-gce2m-lgce200o]*

Other elective courses

> Other elective courses *[en-prog-2024-gce2m-lgce229o]*

MAJORS FOR MASTER IN CIVIL ENGINEERING

MAJOR IN GEOTECHNICAL ENGINEERING

- Mandatory
- Optional
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- 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.

Content:

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

MAJOR IN STRUCTURAL ENGINEERING

- O 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

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

MAJOR IN ARCHITECTURE

- 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.

Minimum 15 credit(s)

Year

MAJOR IN SUSTAINABLE CONSTRUCTION

- 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.

Content:

				Year 1	Year 2
LGCIV2043	Timber Structures	Pierre Latteur	FR [q2] [20h+15h] [4 Credits]	x	x
LGCIV2047	Pathology and rehabilitation of structures	Luca Sgambi	FR [q2] [30h] [4 Credits]	x	x
LICAR2841	Conception de l'architecture avec le bois		FR [q2] [22.5h] [3 Credits]	x	x
LMAPR2483	Durability of materials	Laurent Delannay Thomas Pardoen	EN [q2] [30h+22.5h] [5 Credits] *> French-friendly*	x	x
LICAR2801	Theory and research in the physical sciences: sustainable building	Sergio Altomonte Laura Marin Restrepo Geoffrey Van Moeseke	FR [q1] [80h] [9 Credits]	x	x
LICAR2823	Edification soutenable 3 : architecture climatique	Sergio Altomonte Laura Marin Restrepo	FR [q2] [22.5h] [3 Credits]	x	x
LICAR2831	Architecture : rénovation, restauration	Cécile Mairy	FR [q2] [22.5h] [3 Credits]	x	x
LLOCI2006	Parametric design				

MAJOR IN ENVIRONNEMENTAL ENGINEERING

- Mandatory
- Optional
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- 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:

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
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- 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...)

Content:

				Year 1	Year 2
LEPL2211	Business issues introduction	Benoît Gailly	EN [q2] [30h] [3 Credits] > *French-friendly*	x	x
LEPL2212	Financial performance indicators	Anne-Catherine Provost	EN [q2] [30h+5h] [4 Credits] > *French-friendly*	x	x
LEPL2214	Law, Regulation and Legal Context	Vincent Cassiers Werner Derycke	FR [q1] [30h+5h] [4 Credits]	x	x

One course between

From 3 to 5credit(s)

LEPL2210	Ethics and ICT	Axel Gosseries Olivier Pereira	EN [q2] [30h] [3 Credits] > *French-friendly*	x	x
LLSMS2280	Business Ethics and Compliance Management	Carlos Desmet	EN [q1] [30h] [5 Credits]	x	x

Cours en marketing

MGEST1108	Marketing	Nadia Sinigaglia	FR [q2] [45h+20h] [6 Credits]	x	x
MLSMM2136	Trends in Digital Marketing	Ingrid Poncin	FR [q2] [30h] [5 Credits]		x
MLSMM2134	e-Consumer Behavior	Karine Charry	FR [q2] [30h] [5 Credits]		x

Cours en Sourcing and Procurement

LLSMS2036	Supply Chain Procurement	Per Joakim Agrell Antony Paulraj	EN [q1] [30h] [5 Credits]	x	x
LLSMS2038	Procurement Organisation and Scope	x			

				Year 1	Year 2
⊠ LNEER2600	Seminar of entry to professional life in Dutch - Upper-Intermediate level	Isabelle Demeulenaere (coord.) Dag Houdmont	NJ [q1 or q2] [30h] [3 Credits]	x	x

⊠ Group dynamics

⊠ LEPL2351	Become a tutor	Jean-Charles Delvenne (coord.) Delphine Ducarme Thomas Pardoen			

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

Teaching method

Methods that promote multidisciplinary studies

The Master's degree programme in civil and environmental engineering (with a focus on construction) is by nature interdisciplinary. This is especially apparent in two projects: a building project completed with architectural engineering students and a structural engineering project completed with engineering students from all fields. Among the major courses, some are included in the Master's degree programmes in architectural engineering (design and architecture), physical engineering, chemistry and materials science, mechanics and bioengineering as well urban planning and sustainable development. Furthermore, students may expand their knowledge by taking elective courses in non-technical disciplines.

Various teaching strategies

The teaching methods used in the Master's degree programme in civil and environmental engineering are consistent with that of the Bachelor's degree programme in engineering sciences: active learning, an equal mix of group work and individual work, and emphasis on the development of non-technical skills.

One important teaching method is the assignment of projects that integrate several subjects. This allows students to develop the critical

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

Mobility and/or Internationalisation outlook

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: FAME and STRAINS.

In addition to exchange programmes under the Erasmus+ programme, numerous agreements have been established with a wide range of universities through various partner networks such as:

- TIME network (Top Industrial Managers in Europe).

- CLUSTER network

- Magalhães network

- Circle U. network through several networks and European University Alliance

So, there's no shortage of opportunities to gain an additional qualification and/or spend part of the year abroad during your two-year Master's degree! It's the perfect opportunity to discover or improve your knowledge of a foreign language, tackle subjects from a new angle and gain unique experience in Europe or the rest of the world.

Possible trainings at the end of the programme

Doctoral programmes

1. GraSMech-Graduate School in Mechanics
2. ENVITAM-Sciences, Technologies and Environmental management

UCLouvain Master's degrees (about 60) are accessible to UCLouvain Master's degree holders

For example:

- Different Master's degree programmes in management (automatic admission based on written application).
- The Master [60] in Information and Communication at Louvain-la-Neuve or the Master [60] in Information and Communication at Mons

Contacts

Curriculum Management

Entity

Structure entity	SST/EPL/GC
Denomination	(GC)
Faculty	Louvain School of Engineering (EPL)
Sector	Sciences and Technology (SST)
Acronym	GC
Postal address	Place du Levant 1 - bte L6.11.01 1348 Louvain-la-Neuve Tel: +32 (0) 10 47 21 12 - Fax: +32 (0) 10 47 21 79

Academic supervisor: Pierre Latteur

Jury

- Président du Jury: Claude Oestges
- Secrétaire du Jury: Pierre Latteur

Useful Contact(s)

- Secrétariat: Nathalie Sergoigne