



DAT12M

2024 - 2025

● LEPL2020

Professional integration work

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.

Students who have other professional integration activities in their personal programme, or who can demonstrate an equivalent activity could be exempted

LIST OF FOCUSES

> [Professional Focus : Data Analytics](#) [en-prog-2024-dati2m-ldati210s]

MAJOR IN NUMERICAL METHODS AND OPTIMISATION

- 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...)

The student who wishes to validate this option chooses 15 credits among:

Year

1 2

o Content:**o Compulsory courses**

○ LINMA2471	Optimization models and methods II	François Glineur Geovani Nunes Grapiglia	EN [q1] [30h+22.5h] [5 Credits] 🌐 > French-friendly	X	X
○ LINMA2380	Matrix computations	Raphaël Jungers	EN [q1] [30h+22.5h] [5 Credits] 🌐 > French-friendly	X	X

o One course between

⊗ LINFO2266	Advanced Algorithms for Optimization	Pierre Schaus	EN [q1] [30h+15h] [5 Credits] 🌐 > French-friendly	X	X
⊗ LINMA2450	Combinatorial optimization	Julien Hendrickx Geovani Nunes Grapiglia	EN [q1] [30h+22.5h] [5 Credits] 🌐 > French-friendly		X

⊗ Elective courses

⊗ LINMA2470	Stochastic modelling	Philippe Chevalier Mehdi Madani (compensates Philippe Chevalier)	EN [q2] [30h+22.5h] [5 Credits] 🌐 > French-friendly	X	X
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ELECTIVE TECHNICAL COURSES

MAJOR IN INTERDISCIPLINARY PROGRAM IN ENTREPRENEURSHIP - INEO

Commune à la plupart des masters de l'EPL, cette option a pour objectif de familiariser l'étudiant-e avec les spécificités de l'entreprenariat et de la création d'entreprise afin de développer chez lui les aptitudes, connaissances et outils nécessaires à la création d'entreprise.

Cette option rassemble des étudiants de différentes facultés en équipes interdisciplinaires afin de créer un projet entrepreneurial. La formation interdisciplinaire en entrepreneuriat (INEO) est une option qui s'étend sur 2 ans et s'intègre dans plus de 30 Masters de 9 facultés/écoles de l'UCLouvain. Le choix de l'option INEO implique la réalisation d'un mémoire interfacultaire (en équipe) portant sur un projet de création d'entreprise. L'accès à cette option, ainsi qu'à chacun des cours, est limité aux étudiant-es sélectionnés sur dossier. Toutes les informations sur <https://uclouvain.be/fr/etudier/ineo>.

L'étudiant.e qui choisit de valider cette option doit sélectionner au minimum 20 crédits et au maximum 25 crédits. Cette option n'est pas accessible en anglais et ne peut être prise simultanément avec l'option « Enjeux de l'entreprise ».

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- △ ⊕ Not offered in 2024-2025 or the following year
- Activity with requisites
- 🌐 Open to incoming exchange students
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Year

1 2

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COURS AU CHOIX EN CONNAISSANCES SOCIO-ÉCONOMIQUES

OTHERS ELECTIVE COURSES

Les cours au choix recommandés et accessibles aux étudiant-es du master ingénieur en sciences des données ou du master en sciences des données sont listés ci-dessus, dans les options et autres listes de cours au choix. L'étudiant-e est également libre de proposer d'autres cours des programmes de Masters EPL qui seraient pertinentes à son parcours personnel, pour autant que cela respecte les règles de constitution de programme du Master. Ces cours doivent être approuvés par le jury restreint.

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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...)

Year

1 2

o Content:

The elective courses recommended and available for Master students in Data Science Engineering are listed here above and in the courses of EPL. However, a student can further suggest other courses that would be relevant for his/her personal curriculum, pending that this is compliant with the rules for setting up a personal Master programme.

⊗ Languages

Students may select from any language course offered at the ILV. Special attention is placed on the following seminars in professional development:

⊗ LALLE2500	Professional development seminar German	
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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.

To enter the Master in Data Science, Information Technology orientation, the student must have a minimum of previous skills in mathematics, computer science, algorithms and probability-statistics. If this is not the case, he/she must add additional courses to his/her Master's program. The content of this additional training is determined by the program commission. The skills to be mastered correspond to those of the following courses:

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⌘ Mathematics - Calculus and linear algebra

The student follows one of the following blocks:

⌘ Module 1

- LINFO1111 [Analysis](#)

○ Un cours parmi :

⌘ LINMA2111



Course prerequisites

There are no prerequisites between course units (CUs) for this programme, i.e. the programme activity (course unit, CU) whose learning

DATI2M - 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 Access on the file.

University Bachelors

Diploma

Special Requirements

Bachelor in Computer Sciences

[Access based on application](#)

See "Personalized access"

Non university Bachelors

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

Diploma	Access	Remarks
BA en informatique de gestion - crédits supplémentaires entre 30 et 60		



Admission and Enrolment Procedures for general registration

Teaching method

Active learning and soft skills

You will play an active role in your training. The teaching approach is a balanced mix of lectures, exercises, projects to be carried out alone or in groups. The teaching methods are varied. At certain times, you will be led to discover concepts or techniques independently, and the teaching staff is then seen as a resource made available to you to support your learning.

At other times, the pedagogy is more transmissive and provides you with the necessary keys to carry out subsequent tasks. An important place is reserved for non-technical skills (autonomy, organisational skills, time management, communication in different modes, etc.). In particular, through a pedagogy that emphasises project activities (including a large-scale project that puts groups of students in a semi-professional situation), the course develops a critical mind capable of designing, modelling, implementing and validating complex computer systems.

Languages

The lingua franca of data science is mainly English. The use of English throughout the programme allows you to develop your command of this language, which will facilitate your professional integration. Course materials and supervision are in English. However, you can always ask questions or take the exam in French if you wish. In addition, the programme offers the possibility of attending extra language courses and participating in exchange programmes abroad.

Interdisciplinarity

Like many academics, the data scientist will be required to manage projects and a team in the course of his or her career, and will have to take an interest in the complex socio-economic context in which data science is embedded. You will therefore be invited to open up your training to other disciplines via elective courses or certain options such as the option "interdisciplinary program in entrepreneurship".

Evaluation

The evaluation methods comply with the [regulations concerning studies and exams](#). More detailed explanation of the modalities specific to each learning unit are available on their description sheets under the heading "Learning outcomes evaluation method".

Each unit of the programme includes an oral or written examination, often supplemented by a project leading to a report which is part of the assessment. The optional internship and the master thesis each involve the writing of a document which is defended orally before a jury.

To compute the final grade, the marks obtained for the teaching units are weighted 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.

If you would like more information, please visit the dedicated pages of the [EPL International Office](#) to discover all the destinations,

Contacts

Curriculum Management

Entity

Structure entity

SST/EPL/DACS

Denomination

(DACS)

Faculty

Louvain School of Engineering (EPL)

Sector

Sciences and Technology (SST)

Acronym

DACS

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1348 Louvain-la-Neuve

Website

www.uclouvain.be/epl

Academic supervisor: [Laurent Jacques](#)

Jury

- Président: [Claude Oestges](#)
- Secrétaire du Jury: [Siegfried Nijssen](#)

Useful Contact(s)

- Secrétariat: [Pascale Premereur](#)

