UCLouvain

GBIO2M

2026 - 2027

Master [120] in Biomedical Engineering

At Louvain-la-Neuve - 120 credits - 2 years - Day schedule - In English
Dissertation/Graduation Project : **YES** - Internship : **optional**
Activities in English: **YES** - Activities in other languages : **optional**
Activities on other sites : **optional**
Main study domain : **Sciences de l'ingénieur et technologie**
Organized by: **Louvain School of Engineering (EPL)**
Programme acronym: **GBIO2M** - Francophone Certification Framework: 7

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GBIO2M - Introduction

Introduction

Introduction

This master's programme trains engineers capable of applying their skills in analysis, modelling, design and creativity to tackle future technological challenges in the scientific and technical fields related to biomedical engineering, within a rapidly evolving European and global context.

Upon completing your master’s degree, you will have gained foundational knowledge across all areas of biomedical engineering (bioinstrumentation, biomaterials, imaging and medical physics, mathematical modelling, artificial organs and rehabilitation, bioinformatics and biomechanics) and advanced training in one or more specialisations.

A series of video profiles of young biomedical engineers can be found on the “job description” page of the faculty .

Your profile

You:

- have developed a strong interest in the biomedical field and its technological products (as a result of your undergraduate studies);
- are looking for targeted training to meet current scientific and technological challenges, as well as the national and international job market;
- want to play a role in development, production or management in the healthcare sector.

Your programme

This master’s degree offers you:

- an understanding of major scientific and industrial issues in the fields of biomedical engineering applications;
- classes that combine theory and practice to develop advanced professional skills;
- the choice of one of more majors in specific areas of biomedical engineering;
- the opportunity to complete an internship in a hospital, industry or research centre;
- the possibility of completing part of your master’s degree abroad (in Europe or elsewhere) with the option in some cases to obtain a "dual master’s degree" (a degree jointly awarded by UCLouvain and the other institution where you have studied).

GBIO2M - Teaching profile

Learning outcomes

Currently, an increasing number of engineers are applying their skills in analysis and creativity to the healthcare sector. The **Civil Biomedical Engineering Master's programme** aims to train engineers capable of addressing the scientific and technical challenges associated with biomedical engineering within an evolving European and global context. Inherently multidiplinary, this programme relies on strong collaboration between the fields of Sciences and Technology, and Health Sciences.

Building up on students' existing knowledge in basic sciences (physics, chemistry, mathematics) and life science (biology, anatomy, biochemistry and physiology) this master's programme provides the opportunity to develop **multidisciplinary skills** across a range of applications related to living systems. Upon completing their training, students are expected to become professionals capable of better **understanding and modelling** living systems in order to **design analytical or therapeutic tools** (for example, by developing new biomedical technologies).

At the end of the programme, students will have foundational knowledge in the main areas of biomedical engineering applications : bioinstrumentation, biomaterials, medical imaging, mathematical modelling, artificial organs and rehabilitation, bioinformatics and biomechanics. They will also have advanced training in one or more of these disciplines, covering a broad range of areas of expertise.

By choosing among several elective courses, students can opt either polyvalent profile or one being more specialised. Fields of particular interest include (1) software development and algorithms for biomedical data; (2) biomaterials (implants, etc.); (3) biomechanics and medical robotics; (4) medical imaging and medical physics; (5) clinical engineering (i.e. engineering jobs in the hospital).

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

1. Demonstrate mastery of a solid body of knowledge and skills in basic science and engineering science allowing them to understand and solve biomedical engineering problems (Axis 1).

1.1 Identify and use biomedical engineering concepts, laws and reasoning to solve problems in a variety of areas:

- develop algorithms and software particularly for dealing with biomedical data; analyse biological data and medical images
- biomaterials (interfaces, biocompatibility, etc.)
- biomechanics, motor control and medical robotics (for surgery and rehabilitation)
- clinical engineering

1.2 Identify and use the modelling and calculation tools necessary to solve problems raised by the fields mentioned above
1.3 Validate problem solving results, notably those expressed in orders of magnitude:
-in particular validate models by comparing them to theoretical or experimental results

2.Organise and carry out a procedure in applied engineering related to the development of a product and/or a service that meets a need or solves a particular problem in the field of biomedical engineering (Axis 2).

2.1 Analyse a problem, take stock of its functionalities and constraints; create a specifications note that takes into account technical and economic limits.
2.2 Model a problem and design one or more technical solutions using mechanical, electric, electronic and computerised approaches with the specifications note in mind.
2.3 Evaluate and classify solutions with regard to all the criteria in the specifications note: efficiency, feasibility, quality, ergonomics, security, biocompatibility, environmental and social sustainability, etc.
2.4 Test a solution though a mock-up, a prototype and/or a numerical model.
2.5 Formulate recommendations to improve a technical solution either to reject it or to explain necessary improvements to make the product operational.

3.Organise and carry out a research project to understand a physical phenomenon or new problem related to biomedical engineering (Axis 3).

3.1 Document and summarise the existing body of knowledge.
3.2 Suggest a model and/or an experimental device allowing for the simulation and testing of hypotheses related to the phenomenon being studied.
3.3. Write a summary report explaining the potentialities of the theoretical and/or technical innovation resulting from the research project.
3.4. Think disruptively and creatively, open to plurality

4.Contribute as part of a team to the planning and completion of a project while taking into account its objectives, allocated resources, and constraints (Axis 4).

4.1 Frame and explain the project's objectives (in terms of performance indicators) while taking into account its issues and constraints (resources, budget, deadlines, standards, environmental regulations, ...). Understand the principal mechanisms that govern the healthcare economy as well as the financing of social security.
4.2 Collaborate on a work schedule, deadlines and roles, for example the division of labour among students.
4.3 Work in a multi/inter/transdisciplinary environment with peers holding different points of view; manage any resulting disagreement or conflicts, identify the contributions and limits of each discipline, dialogue on the same project.
4.4 Make team decisions and assume the consequences of these decisions (whether they are about technical solutions or the division of labour to complete a project).

5.Communicate effectively (speaking or writing in French or a foreign language) with the goal of carrying out assigned projects (Axis 5).

5.1 Identify the needs of all parties: question, listen and understand all aspects of their request and not just the technical aspects.

5.2 Present your arguments, advise and convince your interlocutors (doctors, therapists, technicians, colleagues, clients, superiors, specialists from other disciplines or general public) of your technological choices by adopting their language.
5.3 Communicate through graphics and diagrams: interpret a diagram, present results, structure information.
5.4 Read and analyse different technical documents (rules, plans, specification notes).
5.5 Draft documents that take into account contextual requirements and social conventions as well as the vocabulary specific to biomedical disciplines.
5.6 Make a convincing oral presentation (in French or English) using modern communication techniques.

6. Rigorously mobilise their scientific and technical skills and their critical sense to analyse complex situations by adopting a systemic and transdisciplinary approach, and to adapt their technical responses to the current and future challenges of the socio-economic-ecological transition, thus actively contributing to the transformation of society (axis 6).

6.1 Acquire a knowledge base on the socio-ecological issues and use multi-criteria tools to evaluate the sustainability of a technology, in quantitative and/or qualitative terms.
6.2 Define, specify and analyse a problem in all its complexity, taking into account its various dimensions (social, ethical, environmental, etc.), scales (time, place) and uncertainty.
6.3 Identify, propose and activate engineering levers that can contribute to sustainable development and transition (eco-design, robustness, circularity, energy efficiency, etc.).
6.4 Demonstrate critical awareness of a technical solution in order to verify its robustness and minimize the risks that may occur during implementation, be aware of its limitations, and take a personal stand on ethical, environmental and societal issues.
6.5 Evaluate oneself and independently develop necessary skills for “lifelong learning” in the field.

Programme structure

The master’s degree programme includes:

- core courses (30 credits) including a master thesis and an additional industrial project;
- a professional focus (30 credits);
- one or more optional modules;
- elective courses to complete the programme.

The industrial project (5 credits) is carried out at the beginning of the master's programme, whereas the dissertation is generally submitted at the end of the master's programme (second annual block). Students are also recommended to take the specialised track courses (30 credits) at the beginning of the master’s programme (first annual block). However, depending on their study plan, students may choose to schedule their courses in the first or second annual block, provided that the prerequisites are met. This is of particular importance for students who spend part of their course abroad.

If during their prior academic career, a student has already followed a course included in the programme (mandatory or elective) or an equivalent training activity (pending approval by the programme jury), he or she may replace this activity by elective courses (pending the fullfilment of the programme rules). The student will also need to verify that he/she has obtained the minimum number of credits required for the approval of the diploma as well as for the approval of their major (in order to include their academic distinctions in the diploma appendix).

The resulting programme will be subject to approval by the master's programme review comittee.

GBIO2M Programme

Detailed programme by subject

CORE COURSES [30.0]

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	2
LGBIO2990	Master Thesis *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.*		EN [q1+q2] [] [25 Credits]		x
LGBIO2220	Industrial project in biomedical engineering	Philippe Lefèvre Philippe Lefèvre (compensates Sophie Demoustier) Renaud Ronsse Renaud Ronsse (compensates Sophie Demoustier)	EN [q1+q2] [30h+30h] [5 Credits] *> French-friendly*	x	x

PROFESSIONAL FOCUS [30.0]

- 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...)

The specialised focus in biomedical engineering provides a range of courses covering major areas of biomedical engineering, from bioinformatics and biomechanics to imaging. It thus represents the "generalist" aspect of the training.
Due to the significant number of hours dedicated to this focus, students can nonetheless expect to achieve a thorough level of expertise in each of the relevant disciplines.

Content:

				Year 1	Year 2
LGBIO2010	Bioinformatics	Vincent Branders (compensates Pierre Dupont)	EN [q1] [30h+30h] [5 Credits] > French-friendly	x	x
LGBIO2020	Bioinstrumentation	Enrique Ignacio Germany Morrison (compensates Michel Verleysen) André Mouraux	EN [q2] [30h+30h] [5 Credits] > French-friendly	x	x
LGBIO2030	Biomaterials	Christine Dupont Loïc Germain (compensates Sophie Demoustier)	EN [q1] [30h+30h] [5 Credits] > French-friendly	x	x
LGBIO2040	Biomechanics	Greet Kerckhofs	EN [q2] [30h+30h] [5 Credits] > French-friendly	x	x
LGBIO2050	Medical Imaging	Greet Kerckhofs John Lee Benoît Macq	EN [q1] [30h+30h] [5 Credits] > French-friendly	x	x
LGBIO2060	Modelling of biological systems	Philippe Lefèvre	EN [q1] [30h+30h] [5 Credits] > French-friendly	x	x

OPTIONS

In the section "Options and elective courses in biomedical civil engineering", students must choose at least one of the 5 options. They may take more than one.

In the section "Options and elective courses in socio-economic knowledge", students either successfully complete one of the two options or choose a minimum of 6 credits from the courses in the option in business issues (maximum one innovation class may be chosen, maximum one course among those offered by the CPs may be taken into account in these 6 credits).

Students will complete their programme by selecting courses from the biomedical engineering options and the list of electives.

Majors in biomedical engineering

> Major in Clinical Engineering *[en-prog-2026-gbio2m-lgbio221o]*
> Major in acquisition and processing of biomedical data *[en-prog-2026-gbio2m-lgbio222o]*
> Major in Biomaterials *[en-prog-2026-gbio2m-lgbio226o]*
> Major in Biomechanics and medical robotics *[en-prog-2026-gbio2m-lgbio227o]*
> Major in Medical physics and medical imaging *[en-prog-2026-gbio2m-lgbio232o]*
> Cours au choix disciplinaires *[en-prog-2026-gbio2m-lgbio237o]*

Options and elective courses in socio-economic knowledge

> Major in Business risks and opportunities *[en-prog-2026-gbio2m-lgbio230o]*
> Major in Interdisciplinary Program in Entrepreneurship - INEO *[en-prog-2026-gbio2m-lgbio231o]*

> Elective courses in socio-economic knowledge *[en-prog-2026-gbio2m-lepl200o]*
> Option in artificial intelligence *[en-prog-2026-gbio2m-lgbio240o]*

Other elective courses

> Other elective courses *[en-prog-2026-gbio2m-lgbio952o]*

MAJORS IN BIOMEDICAL ENGINEERING

MAJOR IN CLINICAL ENGINEERING

The objective of this major is to provide students with the necessary body of knowledge to work as an engineer in a hospital or in a biomedical products company. It covers areas related to the management of medical technologies, quality control, etc

- O 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...)

From 20 to 30credit(s)

O Content:

O Required courses (8 credits)

				Year 1	Year 2
O LGBIO2110	Introduction to Clinical Engineering	Benoit Delhaye Philippe Lefèvre	EN [q2] [30h] [3 Credits] *> French-friendly*	x	x
O LGBIO2114	Artificial organs and rehabilitation	Christophe Beauloye Benoit Delhaye Philippe Lefèvre	EN [q2] [30h+30h] [5 Credits] *> French-friendly*	x	x

⊠ Elective courses

LSTAT2330 and WESP2123 are mutually exclusive
From 12 to 22credit(s)

⊠ LBIRA2110B	Statistical analysis of multivariate data - Applied Econometrics	Xavier Draye Frédéric Gaspart Laura Symul	FR [q1] [27.5h+7.5h] [3 Credits] *> English-friendly*	x	x
⊠ LINFO2172	Databases	Samuel Hiard	EN [q2] [30h+30h] [6 Credits] *> French-friendly*	x	x
⊠ LSTAT2110	Data Analysis	Olivier Caelen	FR [q1] [30h+7.5h] [5 Credits]	x	x
⊠ LSTAT2330	Statistics in clinical trials.	Catherine Legrand	EN [q2] [30h+7.5h] [5 Credits]	x	x
⊠ LDATS2360	Basic SAS programming	Céline Bugli	EN [q1] [15h+7.5h] [5 Credits]	x	x
⊠ WESP2123	Principles of clinical trials	Diego Castanares Zapatero (coord.) Xavier Stephenne	EN [q1] [20h+10h] [4 Credits]	x	x
⊠ WESP2234	Clinical decision making	Andrea Penaloza-Baeza Kiswendsida Clovis Sawadogo (coord.)	EN [q1] [30h] [3 Credits]	x	x
⊠ WFSP2218	Longitudinal analysis: linear, logistic and Poisson regression	Pietro Coletti	EN [q1] [20h+20h] [4 Credits]	x	x

				Year 1	2
⊠ WFSP2260	Human management and organisational behaviour	Charlotte Jewell (compensates Sophie Thunus) Pierre Meurens Laurianne Terlinden (compensates Sophie Thunus)	EN [q1] [40h+30h] [5 Credits]	x	x
⊠ LMECA2711	Quality management and control.	Alexandre Debatty Laurence Guiot (coord.)	EN [q2] [30h+30h] [5 Credits] *> French-friendly*	x	x

MAJOR IN ACQUISITION AND PROCESSING OF BIOMEDICAL DATA

The objective of this major is to provide students with the necessary body of knowledge to acquire and analyze biomedical data, i.e. either raw signal data or large bases of pre-processed data. This major is especially well-suited for students holding a bachelor in computer science, electricity or applied mathematic

- 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...)

From 20 to 30credit(s)

Content:

Required courses (10 credits)

				Year 1	Year 2
LELEC2870	Machine learning : regression, deep networks and dimensionality reduction	John Lee Michel Verleysen	EN [q1] [30h+30h] [5 Credits] > French-friendly	x	x
LELEC2900	Signal processing	Laurent Jacques Luc Vandendorpe	EN [q2] [30h+30h] [5 Credits] > French-friendly	x	x

Elective courses

The classes LSTAT2320 and LBIRC2106 are mutually exclusive as are the classes LSTAT 2120 and LBIRA2101.
From 10 to 20credit(s)

LELEC2531	Digital electronic systems	Martin Andraud	EN [q1] [30h+30h] [5 Credits] > French-friendly	x	x
LELEC2532	Analog electronic systems	David Bol Denis Flandre	EN [q2] [30h+30h] [5 Credits] > French-friendly	x	x
LELEC2811	Instrumentation and sensors	Sébastien Toussaint (compensates Laurent Francis)	EN [q1] [30h+30h] [5 Credits] > French-friendly	x	x
LINFO2251	Software Quality Assurance	Charles Pecheur	EN [q2] [30h+15h] [5 Credits] > French-friendly	x	x
LINFO2262	Machine Learning :classification and evaluation	Pierre Dupont	EN [q2] [30h+30h] [5 Credits] > French-friendly	x	x
LINFO2381	Health Informatics	Sébastien Jodogne	EN [q2] [30h+30h] [5 Credits] > French-friendly	x	x
LINMA2361	Nonlinear dynamical systems	Pierre-Antoine Absil Estelle Massart	EN [q1] [30h+22.5h] [5 Credits] > French-friendly	x	x
LINMA2370	Modelling and analysis of dynamical systems	Jean-Charles Delvenne	EN [q1] [30h+22.5h] [5 Credits] > French-friendly	x	x
LINMA2471	Optimization models and methods II	François Glineur Geovani Nunes Grapiglia	EN [q1] [30h+22.5h] [5 Credits] > French-friendly	x	x
LINMA2875	System Identification	Gianluca Bianchin	EN [q2] [30h+30h] [5 Credits] > French-friendly	x	x
LSTAT2320	Design of experiment. *This course cannot be selected if it has already been validated in a previous programme.*	Catherine Rasse Laura Symul	EN [q2] [30h+9.5h] [5 Credits] > English-friendly	x	x
LSTAT2110	Data Analysis	Olivier Caelen	EN [q1] [30h+7.5h] [5 Credits]	x	x
LSTAT2120	Linear models	Christian Hafner	EN [q1] [30h+15h] [5 Credits] > French-friendly	x	x
LBIRA2110B	Statistical analysis of multivariate data - Applied Econometrics	Xavier Draye Frédéric Gaspart Laura Symul	EN [q1] [27.5h+7.5h] [3 Credits] > English-friendly	x	x
LGBIO2072	Mathematical models in neuroscience	Frédéric Crevecoeur	EN [q1] [30h+30h] [5 Credits] > French-friendly	x	x

MAJOR IN BIOMATERIALS

The goal of this major is to provide students with the necessary body of knowledge to understand and develop technologies related to biomaterials (implants, biocompatibility, etc.). This major is particularly well-suited for students holding a bachelor in applied chemistry and physics AND biomedical engineering.

- 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...)

From 20 to 30credit(s)

Content:

				Year 1	Year 2
Required course KIMA students (5 credits)					
KIMA students must enrol in LGBIO2030.					
LGBIO2030	Biomaterials *This course is mandatory for KIMA students but cannot be chosen by GBIO2M students*	Christine Dupont Loïc Germain (compensates Sophie Demoustier)	EN [q1] [30h+30h] [5 Credits] *> French-friendly*	x	x
Required courses GBIO students					
GBIO students must enrol in LMAPR2020 and LFYKI1201, unless they took this course during their undergraduate (BAC) programme.					
From 5 to 10credit(s)					
LFYKI1201	Materials science	Jean-Christophe Charlier Antoine Hilhorst (compensates Pascal Jacques)	FR [q1] [30h+30h] [5 Credits]	x	x
LMAPR2020	Materials Selection	Pierre Bollen Alain Jonas	EN [q2] [30h+22.5h] [5 Credits] *> French-friendly*	x	x
Recommended courses					
Minimum 10 credit(s)					
LBIR1250	Biochemistry I *The course LBIR1250 may be selected as an elective course unless this undergraduate course has already been successfully completed as part of a previous programme.*	Laure-Alix Clerbaux (coord.) Mathias Cobbaut	FR [q1] [30h+15h] [4 Credits]	x	x
LBIR1355	microbial metabolism and biomolecules synthesis	Laure-Alix Clerbaux Benoît Stenuit (coord.)	FR [q2] [22.5h+15h] [4 Credits]	x	x
LELEC2560	Micro and Nanofabrication Techniques	Benoît Hackens Benoît Hackens (compensates Laurent Francis) Jean-Pierre Raskin Jean-Pierre Raskin (compensates Laurent Francis)	EN [q2] [30h+30h] [5 Credits] *> French-friendly*	x	x
LMAPR2012	Polymers for advanced technologies	Karine Glinel Karine Glinel (compensates Sophie Demoustier) Jean-François Gohy Jean-François Gohy (compensates Sophie Demoustier)	EN [q2] [45h+15h] [5 Credits] *> French-friendly*	x	x
LGBIO2071	Tissue Engineering	Greet Kerckhofs	EN [q2] [30h+30h] [5 Credits] *> French-friendly*	x	x
LVETE1337	Immunology *Sera prochainement remplacé par le partim LVETE1337B (partie magistrale)*	Pauline Loos	FR [q1] [25h+10h] [3 Credits]	x	x

				Year 1	2
⊠ LMAPR2091	Polymer Science and Engineering *LMAPR2091 and LCHM2261B courses must be taken together (during the same year).*	Alain Jonas Evelyne Van Ruymbeke	EN [q1] [30h+10h] [3 Credits] *> French-friendly*	x	x
⊠ LCHM2261B	Polymer Chemistry and Physical Chemistry (part 2 : Polymer Physical Chemistry) *LMAPR2091 and LCHM2261B courses must be taken together (during the same year).*	Charles-André Fustin Jean-François Gohy Alain Jonas	EN [q1] [22.5h+7.5h] [2 Credits] *> French-friendly*	x	x

⊠ Elective courses

⊠ LBIRC2101	Biochemical analysis	François Chaumont Pierre Morsomme (coord.)	FR [q1] [22.5h+30h] [4 Credits] *> English-friendly*	x	x
⊠ LBIRC2108	Biochemical and Microbial Engineering	Benoît Stenuit	EN [q2] [30h+22.5h] [5 Credits] *> French-friendly*	x	x
⊠ LGBIO2020	Bioinstrumentation *For GBIO2M students - LGBIO2020 cannot be taken in this option, it must be validated in the finality.*	Enrique Ignacio Germany Morrison (compensates Michel Verleysen) André Mouraux	EN [q2] [30h+30h] [5 Credits] *> French-friendly*	x	x
⊠ LMAPR2013	Science and engineering of metals and ceramics	Laurine Choisez Pascal Jacques	EN [q1] [30h+30h] [5 Credits] *> French-friendly*	x	x
⊠ LMAPR2014	Physics of Functional Materials	Xavier Gonze Benoît Hackens Gian-Marco Rignanese	EN [q1] [37.5h+22.5h] [5 Credits] *> French-friendly*	x	x
⊠ LMAPR2018	Rheology	Evelyne Van Ruymbeke	EN [q2] [30h+30h] [5 Credits] *> French-friendly*	x	x
⊠ LMAPR2016	Project in Polymer Science	Charles-André Fustin Alain Jonas	EN [q2] [30h+15h] [5 Credits] *> French-friendly*	x	x
⊠ LMAPR2631	Surface Analysis	Arnaud Delcorte Benoît Hackens	EN [q2] [30h+15h] [5 Credits] *> French-friendly*	x	x
⊠ LMAPR2481	Deformation and fracture of materials	Hosni Idrissi Thomas Pardoen	EN [q1] [30h+30h] [5 Credits] *> French-friendly*	x	x
⊠ LMAPR2483	Durability of materials	Laurent Delannay Thomas Pardoen	EN [q2] [30h+22.5h] [5 Credits] *> French-friendly*	x	x

MAJOR IN BIOMECHANICS AND MEDICAL ROBOTICS

The goal of this major is to provide students with the necessary body of knowledge to understand and develop technologies related to biomechanics (fluids and solids) and medical robotics (surgical assistance and rehabilitation). This major is particularly well-suited for students holding a bachelor in mechanics.

- O 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...)

From 20 to 30credit(s)

				Year 1	Year 2
O Content:					
O Required courses (10 credits)					
O LMECA2170	Computational Geometry	Vincent Legat Jean-François Remacle	EN [q1] [30h+30h] [5 Credits] > *French-friendly*	x	x
O LMECA2355	Design of Medical Devices	Greet Kerckhofs Ann Vankrunkelsven	EN [q1] [30h+30h] [5 Credits] > *French-friendly*	x	x
⊠ Elective courses					
From 10 to 20credit(s)					
⊠ LINMA2671	Advanced control and applications	Julien Hendrickx	EN [q1] [30h+30h] [5 Credits] > *French-friendly*	x	x
⊠ LINMA2875	System Identification	Gianluca Bianchin	EN [q2] [30h+30h] [5 Credits] > *French-friendly*	x	x
⊠ LMECA2300	Advanced Numerical Methods	Pierre-Alexandre Beaufort (compensates Jean-François Remacle) Philippe Chatelain Christophe Craeye Vincent Legat	EN [q2] [30h+30h] [5 Credits] > *French-friendly*	x	x
⊠ LMECA2660	Numerical methods in fluid mechanics	Grégoire Winckelmans	EN [q2] [30h+30h] [5 Credits] > *French-friendly*	x	x
⊠ LELME2732	Robot modelling and control	Hwayeong Jeong Renaud Ronsse	EN [q2] [30h+30h] [5 Credits] > *French-friendly*	x	x
⊠ LMECA2755	Industrial automation	Bruno Dehez Paul Fisette Renaud Ronsse	EN [q1] [30h+30h] [5 Credits] > *French-friendly*	x	x
⊠ LMECA2802	Multibody system Dynamics	Paul Fisette	EN [q2] [30h+30h] [5 Credits] > *French-friendly*	x	x
⊠ LMECA2840	Project in Mechanical Design II	Bruno Dehez Hwayeong Jeong Renaud Ronsse	EN [q1+q2] [30h+30h] [6 Credits] > *French-friendly*	x	x
⊠ LMECA2335	Biorobotics	Renaud Ronsse	EN [q2] [30h+30h] [5 Credits]	x	x

MAJOR IN MEDICAL PHYSICS AND MEDICAL IMAGING

The goal of this major is to provide students with the necessary body of knowledge to understand and develop technologies related to medical physics and medical imaging. This major is particularly well-suited for students holding a bachelor in electricity or applied chemistry and physics.

- 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...)

From 20 to 30credit(s)

Content:

Required courses (10 credits)

				Year 1	Year 2
LELEC2885	Image processing and computer vision	Christophe De Vleeschouwer Laurent Jacques	EN [q1] [30h+30h] [5 Credits] > French-friendly	x	x
LGBIO2070	Engineering challenges in protontherapy	Guillaume Janssens John Lee Edmond Sterpin	EN [q2] [30h+30h] [5 Credits] > French-friendly	x	x

Elective courses

From 10 to 20credit(s)

LMECA2645	Major technological hazards in industrial activity.	Aude Simar	FR [q2] [30h] [3 Credits]	x	x
LPHYS2102	Ionizing Radiation Detection and Nuclear Instrumentation	Eduardo Cortina Gil	EN [q1+q2] [26h+26h] [5 Credits]	x	x
LPHY2360	Physique atomique, nucléaire et des radiations	Agni Bethani (compensates Eduardo Cortina Gil)	FR [q1] [22.5h] [2 Credits]	x	x
WMNUC2100	Master and compelmentary master	Véronique Roelants Thierry Vander Borght (coord.)	FR [q1] [15h] [2 Credits]	x	x
WRDTH3120	Fundamental of dosimetry	Edmond Sterpin	EN [q1] [20h] [3 Credits]	x	x
WRDTH3160	Technology, Dosimetry and Treatment Planning in Radiotherapy	Edmond Sterpin (coord.)	EN [q1] [20h+60h] [5 Credits]	x	x
WRPR2330	Utilisation des radioisotopes et des molécules marquées en biologie	Bernard Gallez (coord.) Thierry Vander Borght	FR [q2] [15h+15h] [3 Credits]	x	x
WRPR2021	Radiation protection - general concepts and legislation	Pascal Carlier Dana Ioana Dumitriu Damien Dumont Olivier Gheysens Renaud Lhommel (coord.) Renaud Menten	FR [q2] [23h+5h] [3 Credits]	x	x
LPHYS2504A	Radiation protection	Pascal Froment	EN [q2] [30h+10h] [6 Credits]	x	x

- 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
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- [FR] Teaching language (FR, EN, ES, NL, DE, ...)

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

Cours au choix disciplinaires

Cours au choix disciplinaires en génie génétique

				Year 1	Year 2
Optional LBIR1352	General genetics	Philippe Baret Annika Gillis (coord.)	EN [q2] [45h+15h] [5 Credits]	x	x
Optional LBRMC2101	Genetic engineering	François Chaumont (coord.) Charles Hachez	EN [q1] [37.5h+15h] [5 Credits] > English-friendly	x	x

Cours au choix disciplinaires en génie biochimique

Optional LBRAL2102	Physiological and nutritional biochemistry	Cathy Debier (coord.) Emeline Dierge (compensates Laure-Alix Clerbaux)	EN [q1] [37.5h+0h] [4 Credits] > French-friendly	x	x
Optional LBRAL2104	Food microbiology	Annika Gillis	EN [q2] [30h+22.5h] [4 Credits] > French-friendly	x	x
Optional LBRMC2202	Cell culture technology	David Alsteens Charles Hachez (coord.) Pascal Hols	EN [q1] [30h] [3 Credits] > French-friendly	x	x
Optional LBRNA2202	Nano-biotechnologies	Yves Dufrêne (coord.) Andra Dumitru	FR [q2] [30h] [3 Credits]	x	x
Optional LBRTE2201	Human and environmental toxicology	Cathy Debier	EN [q1] [30h+7.5h] [4 Credits] > French-friendly	x	x

Cours au choix disciplinaires en génie pharmaceutique

Optional LMAPR2118	Fluid-fluid separations	Patricia Luis Alconero Denis Mignon	EN [q2] [30h+22.5h] [5 Credits] > French-friendly	x	x
Optional LMAPR2330	Reactor Design	Juray De Wilde	EN [q2] [30h+30h] [5 Credits] > French-friendly	x	x
Optional LMAPR2380	Solid-fluid separation	Patricia Luis Alconero	EN [q1] [30h+22.5h] [5 Credits] > French-friendly	x	x
Optional LMAPR2430	Industrial processes for the production of base chemicals	Juray De Wilde	EN [q1] [30h+22.5h] [5 Credits] > French-friendly	x	x
Optional WFARM1232	General Pharmacology	Emmanuel Hermans	FR [q1] [22.5h+7.5h] [2 Credits]	x	x
Optional WFARM1307	Physical pharmacy	Rita Vanbever	FR [q2] [15h] [2 Credits]	x	x

Cours au choix disciplinaires en statistiques

Ce module en statistique propose des cours utiles pour le traitement de données (laboratoire d'analyse, recherche clinique, contrôle qualité, etc.). Les étudiant·es qui suivent au-moins 45 crédits dans ce module et parmi les cours de statistique des options du master (labels LBIRA, LBIRC, LSTAT, WESP, WFSP) auront un accès direct au 2e bloc annuel du master en statistique, orientation biostatistique [120 crédits]. Plus d'informations concernant cette passerelle via info-stat-actu@uclouvain.be.

Optional LSTAT2040	Statistical analysis	Anouar El Ghouch Eugen Pircalabelu	EN [q2] [30h+15h] [5 Credits]	x	x
Optional LSTAT2130	Introduction to Bayesian statistics	Philippe Lambert	EN [q2] [22.5h+7.5h] [5 Credits]	x	x
Optional LSTAT2170	Times series	Anna Kiriliouk	EN [q2] [22.5h+7.5h] [5 Credits]	x	x
Optional LSTAT2210	Mixed linear models	Catherine Legrand	EN [q1] [15h+7.5h] [4 Credits]	x	x
Optional LSTAT2220	Analysis of survival and duration data	Ingrid Van Keilegom	FR [q1] [15h+5h] [4 Credits] > English-friendly	x	x

OPTIONS AND ELECTIVE COURSES IN SOCIO-ECONOMIC KNOWLEDGE

MAJOR IN BUSINESS RISKS AND OPPORTUNITIES

- O 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...)

Students wishing to validate this option must select a minimum of 15 credits among the courses offered (maximum one course among those offered by the CPs can be taken into account in these 15 credits).

This option cannot be taken simultaneously with the "Interdisciplinary training in entrepreneurship - INEO" option.

⊠ *Content:*

⊠ Cours spécifiques aux enjeux de l'entreprise

				Year 1	Year 2
⊠ LFSA2995	Company Internship *This course cannot be chosen by GCE Masters students as part of the business issues option, as part of their compulsory courses.*	Dimitri Lederer Jean-Pierre Raskin	FR [q1+q2] [30h] [10 Credits]	x	x
⊠ LEPL1805	People management *This course cannot be chosen if it has already been validated in the bachelor's degree.*	Bauduin Auquier Philippe Henrotaux Renaud Ronsse	FR [q1] [30h+0h] [3 Credits]	x	x
⊠ LEPL2020	Professional integration work	Jean-Pierre Raskin	EN [q1+q2] [30h+0h] [3 Credits] *> French-friendly*		x
⊠ LEPL2210	Ethics and ICT	Axel Gosseries Olivier Pereira	EN [q2] [30h] [3 Credits] *> French-friendly*	x	x
⊠ LEPL2211	Introduction to new venture management	Benoît Gailly	EN [q2] [30h] [3 Credits] *> French-friendly*	x	x
⊠ LEPL2214A	Law, Regulation and Legal Context - (partim A)	Vincent Cassiers Werner Derycke	FR [q1] [30h+0h] [3 Credits]	x	x
⊠ LMECA2645	Major technological hazards in industrial activity.	Aude Simar	FR [q2] [30h] [3 Credits]	x	x
⊠ LMECA2711	Quality management and control.	Alexandre Debatty Laurence Guiot (coord.)	EN [q2] [30h+30h] [5 Credits] *> French-friendly*	x	x
⊠ LLSMS2036	Supply Chain Procurement	Per Joakim Agrell Michael Henke	EN [q1] [30h] [5 Credits]	x	x

⊠ Innovation classe

Maximum one innovation class can be chosen.

⊠ LEPL2021	Innovation classes for transition and sustainable development	Benoît Macq Xavier Marichal	EN [q1] [30h+15h] [5 Credits]	x	x
⊠ LEPL2022	Health Innovation Classes	Pierre Geens Enrique Ignacio Germany Morrison	EN [q2] [30h+30h] [5 Credits] *> French-friendly*	x	x

MAJOR IN INTERDISCIPLINARY PROGRAM IN ENTREPRENEURSHIP - INEO

The aim of this option, which is common to most EPL masters' programmes, is to familiarise students with the specifics of entrepreneurship and business creation, equipping them with the skills, knowledge, and tools necessary for starting a business.

The interdisciplinary entrepreneurship training (INEO) is an option that spans two years and is integrated into over 30 Master's programmes across 9 faculties/schools at UCLouvain.

Choosing the INEO option requires completing an interfaculty dissertation (in teams) focused on a business creation project. Access to this option, as well as to each of its courses, is limited to students selected based on their application.

Full details are available at https://uclouvain.be/fr/etudier/ineo .

Students who choose this option must select a minimum of 20 credits and a maximum of 25 credits. This option is not available in English and cannot be taken simultaneously with the "Business Risks and Opportunity" option.

- 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...)

Content:

				Year 1	Year 2
Cours obligatoires:					
LINEO2001	Théorie de l'entrepreneuriat	Frank Janssen	FR [q1] [30h+20h] [5 Credits]	x	
LINEO2002	Aspects juridiques, économiques et managériaux de la création d'entreprise	Yves De Cordt Emilie Lubukayi Tshibuabua Ngalula	FR [q1] [30h+15h] [5 Credits]	x	
LINEO2003	Plan d'affaires et étapes-clefs de la création d'entreprise *Les séances du cours LINEO2003 sont réparties sur les deux blocs annuels du master. L'étudiant doit les suivre dès le bloc annuel 1, mais ne pourra inscrire le cours que dans son programme de bloc annuel 2.*	Frank Janssen	FR [q2] [30h+15h] [5 Credits]		x
LINEO2004	Séminaire d'approfondissement en entrepreneuriat	Frank Janssen	FR [q2] [30h+15h] [5 Credits]	x	
Cours préalable:					
Student who have not taken management courses during their previous studies must enroll in LINEO2021.					
LINEO2021	Financer son projet	Olivier Vercruysse	FR [q2] [30h+15h] [5 Credits]	x	

ELECTIVE COURSES IN SOCIO-ECONOMIC KNOWLEDGE

Within the section "Options and elective courses in socio-economic knowledge", students must either validate one of the two options or are required to select at least 6 ECTS credits from the courses offered within the "Major in Business risks and opportunities" (a maximum of one Innovation Class may be selected, and a maximum of one course offered by the CPs may be counted towards these 6 credits).

OPTION IN ARTIFICIAL INTELLIGENCE

- 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...)

Students wishing to validate this option must select 15 credits from the courses offered.

Content:

Major in artificial intelligence

				Year 1	Year 2
LINFO1361	Artificial intelligence	Quentin Cappart Eric Piette	FR [q2] [30h+30h] [5 Credits]	x	x
LINFO2262	Machine Learning :classification and evaluation	Pierre Dupont	EN [q2] [30h+30h] [5 Credits] > *French-friendly*	x	x
LINFO2263	Computational Linguistics and Generative AI	Pierre Dupont	EN [q1] [30h+15h] [5 Credits] > *French-friendly*	x	x
LINFO2364	Mining Patterns in Data	Hélène Verhaeghe	EN [q2] [30h+15h] [5 Credits] > *French-friendly*	x	x
LELEC2870	Machine learning : regression, deep networks and dimensionality reduction	John Lee Michel Verleysen	EN [q1] [30h+30h] [5 Credits] > *French-friendly*	x	x
LELEC2885	Image processing and computer vision	Christophe De Vleeschouwer Laurent Jacques	EN [q1] [30h+30h] [5 Credits] > *French-friendly*	x	x
LINFO2275	Reinforcement Learning: Algorithms and Applications	Quentin Cappart Eric Piette	EN [q2] [30h+15h] [5 Credits] > *French-friendly*	x	x
LINMA2222	Stochastic Optimal Control and Reinforcement Learning	Guillaume Berger Gianluca Bianchin Raphaël Jungers	EN [q1] [30h+22.5h] [5 Credits]	x	x
LINMA2474	High-Dimensional Data Analysis and Optimization	Pierre-Antoine Absil Laurent Jacques Estelle Massart Geovani Nunes Grapiglia	EN [q2] [30h+30h] [5 Credits]	x	x
LGBIO2050	Medical Imaging	Greet Kerckhofs John Lee Benoît Macq	EN [q1] [30h+30h] [5 Credits] > *French-friendly*	x	x

OTHER ELECTIVE COURSES

OTHER ELECTIVE 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...)

Content:

Students may also enroll in any course that is part of other EPL master's programmes, subject to the approval of the selection committee.

Languages

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

				Year 1	Year 2
LALLE2500	Professional development seminar German	Antje Hennig-Wübbenhorst Mélanie Mottin (coord.)	DE [q1+q2] [30h] [3 Credits]	x	x
LALLE2501	Professional development seminar-German	Antje Hennig-Wübbenhorst Mélanie Mottin (coord.)	DE [q1+q2] [30h] [5 Credits]	x	x
LESPA2600	Vocational Induction Seminar - Spanish (B2.2/C1)	Paula Lorente Fernandez (coord.)	ES [q1] [45h] [3 Credits]	x	x
LESPA2601	Vocational Induction Seminar - Spanish (B2.2/C1)	Paula Lorente Fernandez (coord.)	ES [q1] [45h] [5 Credits]	x	x
LNEER2500	Seminar of Entry to professional life in Dutch - Intermediate level	Isabelle Demeulenaere (coord.)	NL [q1 or q2] [30h] [3 Credits]	x	x
LNEER2600	Seminar of entry to professional life in Dutch - Upper-Intermediate level	Isabelle Demeulenaere (coord.) Dag Houdmont	NL [q1 or q2] [30h] [3 Credits]	x	x

Group dynamics

				Year 1	Year 2
LEPL2351	Become a tutor	Jean-Charles Delvenne (coord.) Delphine Ducarme Thomas Pardoen	FR [q1] [15h+30h] [3 Credits]	x	x
LEPL2352	Become a tutor	Jean-Charles Delvenne (coord.) Delphine Ducarme Thomas Pardoen	EN [q2] [15h+30h] [3 Credits]	x	x

Autres UEs hors-EPL

Students may choose a maximum of 8 credits from courses outside the EPL, which are considered non-disciplinary by the programme committee.

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.

GBIO2M - 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
UCLouvain Bachelors			
Bachelor in Engineering		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.
Other bachelors		Access based on application	See "Access based on application" section.
Others Bachelors of the French speaking Community of Belgium			
Bachelier en sciences de l'ingénieur - orientation ingénieur civil		Direct access	L'étudiant n'ayant suivi au préalable ni la majeure, ni la mineure dans la discipline de son master ingénieur civil peut se voir proposer par le jury un adaptation de son programme de master.
Other bachelors		Access based on application	See "Access based on application" section.
Bachelors of the Dutch speaking Community of Belgium			
Bachelor in engineering		Access with additional training	Students who have no specialisation in the field of their civil enginering master degree may have an adapted master programme with up to 60 additional credits.
Other bachelors		Access based on application	See "Access based on application" section.

Foreign Bachelors			
Bachelor in engineering	Bachelors degree of Cluster Institution	Direct access	Students with a Bachelor's degree in engineering sciences who have not taken the equivalent of a minor in the field of their civil enginering master degree may have an adapted master programme.
Bachelor in Engineering field	For others institutions	Access based on application	See "Acces based on application" section.

Non university Bachelors

> Find out more about links to the university

Belgian non-universitary long-cycle bachelor degrees : access based on application -> see "Access based on application" section.

Holders of a 2nd cycle University degree

Diploma	Special Requirements	Access	Remarks
"Licenciés"			

Masters		
Master in Engineering of the French speaking Community of Belgium	Direct access	
Other Belgian masters	Access based on application	See "Access based on application" section.

Holders of a non-University 2nd cycle degree

> Find out more about links to the university

Belgian non-universitary long-cycle master degrees : access based on application -> see "Access based on application" section.

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) .

04/08/2026 : Pending the publication of the 2027-2028 study programme (expected in early March), the selection criteria for 2027-2028 are now available

Admission and Enrolment Procedures for general registration

Teaching method

Methods that promote multidisciplinarity

The Master's degree programme in biomedical engineering is by nature interdisciplinary since it lies at the interface between engineering and biomedical sciences. It is grounded on a solid course programme that provides students with knowledge of the main areas in biomedical engineering as well as various majors in related disciplines.

Various teaching strategies

The teaching methods used in the Master's degree programme in biomedical 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.

A major characteristic of the programme is the immersion of students in research laboratories (for class laboratories, case studies, projects, theses) exposing them to advanced methods and allowing them to learn by questioning. This process is very central for a research perspective.

Half of the student workload in the last year consists in the Master thesis fulfillment and offers students the possibility to deeply investigate. Given its size and context it provides a true initiation into the working life of an engineer or researcher.

Diverse learning situations

Learning is achieved by various pedagogical methods such as internships, case studies, classes, projects, exposure to cutting edge research and meetings with key industrial players in the field.

This variety of teaching techniques allows students to learn in an iterative and progressive way.

The business creation major is based on an interactive teaching method and is oriented toward problem-based learning. Throughout the program, students work in multidisciplinary teams to participate in group projects. The Master's thesis is multidisciplinary in nature so that groups of three students, ideally from different academic departments, can work on a business creation project.

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".

Student work is evaluated according to university rules (see the rules for evaluating coursework and exams) namely written and oral exams, laboratory exams, individual or group work, public presentations of projects and theses defences.

For more information on evaluation methods, students may consult the relevant evaluation descriptions.

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

Mobility and/or Internationalisation outlook

The EPL has developed over a hundred partnerships in 36 countries (both within and outside EU) to offer exchange programmes to its students. EPL also provides opportunities to obtain double degrees, joint degrees or dual master's degrees in several fields. Currently, EPL participates in two Erasmus Mundus programmes: FAME and STRAINS . .

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

- TIME (Top Industrial Managers en Europe).
- CLUSTER
- Magalhães
- Circle U

There are therefore ample 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.

For more information (destinations, testimonials, application procedures), please visit the webpages of the Cellule internationale de l'EPL.

Possible trainings at the end of the programme

Accessible PhD curricula

Through its research-based training component, the GBIO master's program ideally prepares students for doctoral studies. The faculty members involved in the master's program are members of several doctoral schools, which can accommodate students who wish to continue their studies with a doctoral thesis.

UCLouvain master’s degrees (about 60) are accessible to UCLouvain master’s degree holders.

For example:

- the 60-credit master's degree in management sciences (direct access subject to review of application).
- the Master [60] in Information and Communication in Louvain-la-Neuve or the Master [60] in Information and Communication in Mons.

Contacts

Curriculum Management

Entity

Structure entity	SST/EPL/GBIO
Denomination	(GBIO)
Faculty	Louvain School of Engineering (EPL)
Sector	Sciences and Technology (SST)
Acronym	GBIO
Postal address	Place du Levant 3 - bte L5.03.02 1348 Louvain-la-Neuve Tel: +32 (0) 10 47 25 86 - Fax: +32 (0) 10 47 25 98

Academic supervisor: philippe.lefevre@uclouvain.be

Jury

- Président du Jury: claude.oestges@uclouvain.be
- Secrétaire du Jury: philippe.lefevre@uclouvain.be

Useful Contact(s)

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