



## BIRF2M - Introduction

### Introduction

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## BIRF2M - Teaching profile

### Learning outcomes

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Master in Forests and Natural Areas students must endeavour to diagnose and solve complex and original issues in bioengineering through a multidisciplinary approach in order to develop and implement innovative and sustainable solutions.

This Master's programme aims to train experts in the field of management, conservation and the responsible and sustainable use of forests and natural spaces in multiple ecological and socio-economic contexts.

The future bioengineers acquire the knowledge and skills required to become:

- professionals able to tackle and diagnose problems related to the management and use of natural resources and forests and to provide operational solutions: sustainable management of ecosystems, management of natural areas and forests, development of forest-wood resources;
- scientists able to understand complex processes on different spatial and temporal scales, used to multidisciplinary approaches and able to collaborate with other specialists;
- innovators tasked with developing new methods of managing natural environments and forests with a view to ensuring the sustainability of goods, resources and services from ecosystems, in the context of climate change and changing social demands.

Highly versatile and multidisciplinary in character, the course dispensed by the Faculty of Biological, Agricultural and Environmental Engineering focuses on acquiring skills which combine theory and practice to train "bioengineers" mastering a broad base of scientific and technological knowledge and skills allowing them to adopt an integrated approach to biological, agricultural and environmental systems.

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

1. To explore a body of knowledge (knowledge, methods and techniques, models and processes) in natural and human sciences which serves as the foundation from which to operate with expertise in the field of forest sciences.

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













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***OPTIONS [15.0]***

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## OPTION 7F [15.0]

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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

### o Content:

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● LBIRE2105



**OPTION 10F - DATA SCIENCE [15.0]**

- 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

o **Content:**

● LBRTI2101B	<a href="#">Data Science in bioscience engineering</a>	Patrick Bogaert Emmanuel Hanert	(FR) [q1] [30h] [2 Credits] 🌐 > English-friendly	X	
● LBRTI2102	<a href="#">Process-based modelling in bioscience engineering</a>	Emmanuel Hanert	(FR) [q1] [30h+15h] [5 Credits] 🌐 > French-friendly		

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**OPTION 16F [15.0]**

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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
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LBIR1325B





## BIRF2M - 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](#)
- > [Access based on validation of professional experience](#)
- > [Access based on application](#)
- > [Admission and Enrolment Procedures for general registration](#)

#### University Bachelors

Diploma	Special Requirements	Access	Remarks
UCLouvain Bachelors			



## Teaching method

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The interdisciplinary nature, integrated approach and the ability to reason on long-term issues are key dimensions in the training of **bioengineers in forests and natural areas**. This is reflected by:

- grouping of training activities: combined exercises, joint projects, case studies, weekly excursions, forestry tour (a one week study trip in Belgium and/or abroad), visits to companies;
- the integration of various approaches and tools (field observations, laboratory analyses, data bases, information systems, permanent experimental plots, ...), on different spatial scales (from a tree to a catchment basin, from a regional level to a sub-continental level) and temporal scales;
- student teamwork, training students to share their skills;
- the transversal educational offer (organized by other faculties).

**A full array of pedagogical tools is placed at the students' disposal.**

The Louvain-la-Neuve campus includes a 200 ha forest which is owned by UCL: the Bois de Lauzelle. The forest serves as a model for the scientific, pedagogical, economical, ecological and recreational functions of a wood. Several special devices have been put in place in the Bois de Lauzelle that are used both for its daily management as well as for educational purposes. An example is the simulation area for the marking of trees, which, combined with a computer programme, allows to analyse the effects of the choices made during the process; but also a permanent inventory device for ligneous resources. Students learn to recognise ligneous species more easily

This mobility should increase given the harmonization of education at the European level and the conclusion of new partnership agreements outside ERASMUS as well as membership of thematic networks. The AGRO Faculty is also a member of the ATHENS network.

The Master in Forests and Natural Areas proposes privileged exchanges with the following institutions:

1. Université de Moncton, Edmunston campus, Faculté de Foresterie (Canada)
2. Universidad politecnica de Madrid (Spain)
3. Institut Polytechnique LaSalle Beauvais (France)
4. Ecole Nationale du Génie Rural, des Eaux et des Forêts (Nancy, France)
5. Ecole Nationale Forestière d'Ingénieurs (Salé, Morocco)

The Réseau des Ingénieurs Forestiers de Louvain (RIFL) creates possibilities for project-based student mobility.

## Possible trainings at the end of the programme

The Master in Bioengineering programme follows on the Bachelor in Engineering (Bioengineering) with a minor in Environment. Access to this Master is also possible after a minor in Agronomy, providing a small adaptation of the programme that must be validated by the academic secretary.

Successful completion of this programme enables direct entry to other training programmes in the second and third cycles.

- Advanced Masters: the Advanced Masters in the field authorized by regulations in addition to those established by the University Development Commission (Commission Universitaire au Développement CUD) in the same field.
- Doctoral programmes: PHD in Agronomy and Bioengineering

## Contacts

### Curriculum Management

Faculty

Structure entity

Denomination

Sector

Acronym

Postal address

SST/AGRO

Faculty of bioscience engineering (AGRO)

Sciences and Technology (SST)

AGRO

Croix du Sud 2 - bte L7.05.01

1348 Louvain-la-Neuve

Tel: +32 (0) 10 47 37 19 - Fax: +32 (0) 10 47 47 45

<http://www.uclouvain.be/agro>

Website

Mandate(s)

- Dean : Christine Dupont
- Administrative director : Carole Dekelver

Commission(s) of programme

- Commission de programme - Master Bioingénieur-Sciences agronomiques (BIRA)
- Commission de programme - Master Bioingénieur-Chimie et biotechnologies (BIRC)
- Commission de programme - Master Bioingénieur-Sciences & technologies de l'environnement (BIRE)
- Commission de programme - Bachelier en sciences de l'ingénieur, orientation bioingénieur (CBIR)
- Commission de programme interfacultaire en Sciences et gestion de l'environnement (ENVI)
- Fermes universitaires de Louvain (FERM)

Academic supervisor: [Caroline Vincke](#)

Jury

- Président: [president-jury-agro@uclouvain.be](mailto:president-jury-agro@uclouvain.be)
- Secrétaire de jury 2<sup>ième</sup> année de master: [Sophie Opfergelt](#)

Useful Contact(s)

- Conseiller aux études: [conseiller-agro@uclouvain.be](mailto:conseiller-agro@uclouvain.be)

