

























# Master in Agricultural Bioengineering

## Focus Professional

The Master in agricultural Engineering is based on the study and management of temperate and tropical agro-ecosystems. It aims to provide students with the essential tools for the ecological characterization of natural and man-made environments. It also teaches the principles of sustainable management of these environments. In this way, this master combines conservation and production aspects because the responsible management of any agro-ecosystem requires perfect knowledge of its ecology. An important place is logically given to agroecology whose foundations are already set up during the bachelor. In the first part of the MA, the focus is on sciences and technologies dedicated to agronomy and ecology. It also allows students to develop personal skills through a Master's thesis and a long-term internship in an industrial or academic context. This master provides access to the third cycle (doctorate).

### Bloc 1 | M-IRBAS | MA-IRBA

## Tronc commun

- BING-F4002 **Acquisition et analyse de données** | Marius GILBERT (Coordinator) and Marc DUFRENE  
 5 credits [lecture: 24h, tutorial classes: 36h]  first term  French
- BING-F4004 **Entomologie** | Nicolas VEREECKEN (Coordinator)  
 5 credits [lecture: 10h, practical work: 50h]  second term  French
- BING-F4005 **Pédologie et mécanique des sols** | Thomas DROUET DE LA THIBAUDERIE (Coordinator) and Pierre GERARD  
 5 credits [lecture: 42h, tutorial classes: 12h, practical work: 6h]  first term  French
- BING-F4006 **Génétique des populations et amélioration des plantes** | Olivier HARDY (Coordinator), Christian HERMANS and Marjolein VISSER  
 5 credits [lecture: 48h, tutorial classes: 6h]  second term  French
- BING-F403 **Phytotechnie des grandes cultures en régions tempérées** | Julien Louvieux (Coordinator)  
 5 credits [lecture: 24h, tutorial classes: 12h, field trips: 8h]  second term  French
- BING-F404 **Agroécologie et microbiologie des sols et des plantes** | Cécile Thonar (Coordinator)  
 5 credits [lecture: 36h, tutorial classes: 12h]  first term  French
- BING-F415 **Agroécologie et systèmes d'élevage**  
 5 credits [lecture: 36h, tutorial classes: 12h, field trips: 12h]  second term  French
- BING-F416 **Stage d'immersion rural et agroécologie** | Marjolein VISSER (Coordinator) and Cécile Thonar  
 5 credits [lecture: 24h, field trips: 36h]  first and second terms  French
- BING-F430 **Agroécologie et écologie de la conservation** | Nicolas VEREECKEN (Coordinator) and Grégory MAHY  
 5 credits [lecture: 36h, tutorial classes: 12h, project: 12h]  first term  French
- BING-F431 **Innovations agroécologiques et production alimentaire** | Nicolas VEREECKEN (Coordinator)  
 5 credits [lecture: 36h, practical work: 12h, project: 12h]  first term  French
- BIOL-F412 **Biotechnologies animales et végétales** | Nathalie VERBRUGGEN (Coordinator) and Benoît VANHOLLEBEKE  
 5 credits [lecture: 36h, project: 24h]  second term  French
- SOCA-D471 **Agricultures, ruralités et mondialisation** | Laurence ROUDART (Coordinator) and Werner BOSMANS  
 5 credits [lecture: 24h]  first term  French

# Master in Agricultural Bioengineering

## Focus Professional

### Bloc 2 | M-IRBAS | MA-IRBA

## Tronc commun

MEMO-F513 **Mémoire** | Nicolas VERECKEN (Coordinator) and Simon Dellicour  
 5 crédits [mfe/tfe: 300h] 📅 first and second terms

STAG-F012 **Stage en entreprise en sciences agronomiques** | Nicolas VERECKEN (Coordinator) and Simon Dellicour  
 15 crédits [work placement: 180h] 📅 first and second terms 🗨️ French

## Cours optionnels

Cours optionnels pour un total de 20 crédits dont 10 crédits à choisir dans la liste des cours répartis en modules ci-dessous et 10 crédits à choisir dans la rubrique Autre UE.

*A total of ten credits chosen from the following*

### Module: Analyse de données

BING-F535 (optional) **Séminaires d'analyse de données** | Marius GILBERT (Coordinator)  
 5 crédits [tutorial classes: 12h, project: 48h] 📅 second term 🗨️ French

### Module: Caractérisation des systèmes tropicaux

BIOL-F4005 (optional) **Social-ecological systems** | Farid DAHDOUH-GUEBAS (Coordinator)  
 5 crédits [lecture: 30h, tutorial classes: 6h, field trips: 12h] 📅 first term 🗨️ English

### Module: Ecologie appliquée

BIOL-F4001 (optional) **Behavioural Ecology in natural and man-made environments** | Claire DETRAIN (Coordinator)  
 5 crédits [lecture: 36h, tutorial classes: 12h] 📅 first term 🗨️ English

### Module: Ecophysiologie

BIOL-F443 (optional) **Plant responses to environmental stress** | Nathalie VERBRUGGEN (Coordinator)  
 5 crédits [lecture: 24h, project: 24h] 📅 first term 🗨️ English

BIOL-F444 (optional) **Plant-soil interactions** | Pierre Jacques MEERTS (Coordinator)  
 5 crédits [lecture: 24h, tutorial classes: 12h] 📅 first term 🗨️ English

Ce cours ne sera pas donné en 2023-2024.

### Module: Valorisation des ressources ligno-cellulosiques

BING-H5001 (optional) **Biorefinery: from biomass transformation to biobased products** | David CANNELLA (Coordinator)  
 5 crédits [lecture: 36h, practical work: 24h] 📅 first term 🗨️ English

### Module: Géomatique

GEOG-F211 (optional) **Systèmes d'information géographique et projections** | Eléonore WOLFF (Coordinator) and Michele D'ADDERIO  
 5 crédits [lecture: 24h, practical work: 36h] 📅 second term 🗨️ French

GEOG-F425 (optional) **Télé-détection** | Eléonore WOLFF (Coordinator)  
 5 crédits [lecture: 30h, practical work: 30h] 📅 first term 🗨️ French

## Module: Economie et développement

ECON-O405  
(optional)

**Common agricultural policy** | Giulia MELONI (Coordinator)

🕒 5 credits [lecture: 24h] 📅 first term 🗨 English

SOCA-D443  
(optional)

**Anthropologie du développement** | Véronique JOIRIS (Coordinator)

🕒 5 credits [lecture: 24h] 📅 second term 🗨 French

SOCA-D482  
(optional)

**Sécurité alimentaire mondiale** | Laurence ROUDART (Coordinator)

🕒 5 credits [lecture: 24h] 📅 second term 🗨 French

## Autre UE

Choisir 10 crédits dans la liste des cours à option ci-dessous ou dans les programmes de masters de l'Ecole de Bioingénierie de Bruxelles, de la Faculté des Sciences, de l'Ecole Polytechnique de Bruxelles ou dans le programme des Masters bioingénieurs de la Faculté des Bioingénieurs de l'Université Catholique de Louvain (UCL).

*A total of ten credits chosen from the following*

TEMP-0000  
(optional)

**Cours extérieurs au programme**

🕒 10 credits 📅 academic year 🗨 French