

# LaSalle<sup>★</sup>

Beauvais • Institut Polytechnique

Sciences de la Terre, du Vivant et de l'Environnement



**“I fully support the MSc in Plant Breeding from LaSalle Beauvais and research initiative for integration of Biotechnologies.”**

Em Prof M Van Montagu, Chairman IPBO, Laureate World Food Prize 2013



« Par sa construction pluridisciplinaire et sa proximité du monde de l'entreprise, le Master « Plant Breeding » proposé par LaSalle Beauvais permet la formation de chercheurs de haut niveau, capables d'utiliser au mieux tous les outils disponibles pour sélectionner des variétés innovantes et plus performantes. »

Eric Devron, Directeur Général - Union Française des Semenciers



# MSc in PLANT BREEDING



## STAKES AND PURPOSES

Most experts agree that for various reasons including population increase, evolution of food habits, climate changes, new renewable uses of plant products (green chemistry), **the world agriculture production will have to increase by two or three times before 2050**. To meet these challenges, the main source of production increase is expected to come from genetic improvement and Plant Breeding.

Over the last 10 to 20 years, new technologies based on cell and molecular biology have expanded the tool set for crop improvement, including transgenic plants. However, everybody fully recognizes that these new technologies alone could not deliver new improved commercial varieties, but have to be constantly combined with conventional Plant Breeding in order to be successful.

Therefore, there is a significant need for conventional and professional plant breeders with knowledge of Plant Biotechnology. The demand comes mainly from seed industries but also from public sectors and other primary or secondary processing industries who are affected by sustainable supply of their strategic raw materials.

**The Master of Science in Plant Breeding trains future breeders and combines :**

- 1. Plant Improvement, Plant Breeding and Selection**
- 2. Biotechnologies, Cellular and Molecular Biology, Molecular Markers as breeding supports**
- 3. Core technologies in molecular and cellular biology: biomathematics and computational biology.**

---

**AMONG COMPANIES AND INSTITUTIONS THAT SUPPORT US:** FLORIMOND-DESPREZ, LIMAGRAIN, MAÏSADOUR, SAATEN-UNION, SECOBRA, SYNGENTA, BAYER, BASF, UNISIGMA, BONDUELLE, PERNOD-RICARD, TEREOS / INRA, CIRAD, ARVALIS.



*Testimonies of the first promotion:  
[www.lasalle-beauvais.fr](http://www.lasalle-beauvais.fr)*

## CAREERS

**Technical and scientific management of commercial breeding programs; research on plant breeding methodology and technology; cultivar development; seed production and crop improvement.**

## TARGET GROUP

**Students with M1 or Bachelor degree in life science or equivalent and professionals in breeding and related companies and research institutes at BSc level in relevant field.**

**Orlando de Ponti**  
*Former President of ISF*

« I am pleased to notice the fine balance between Plant breeding *senso strictu* (semester 1&2) and Biotechnologies for plant breeding (semester 3&4) and fully support this combination which, today – unfortunately – is rather rare in plant breeding curricula, which tend to focus on the latter part. »

# At a glance

All courses are taught in English.

## The first year curriculum is taught from

September to May on the LaSalle campus in Beauvais (France). It includes group meetings with breeders and covers market analysis, seed production systems, genetic diversity analysis of germplasms, problematics and methods of Plant breeding, quantitative genetics, intellectual property principles and rationale, regulation guidelines. Throughout the first semester, students will also be required to attend classes in French as a foreign language, in addition to the curriculum. The Minor thesis internship takes place from May to September in a company or research institution.

## The second year curriculum

covers practical fields of cell biology, genomics and bioinformatics. It is taught from October through March at the **Faculty of Bioscience Engineering, Ghent University**. Students will benefit from a first rate scientific environment and major plant biotech companies. An integrative pilot case module 'design a breeding project' concludes the third semester. Major thesis internship in Plant Breeding takes place from March to August.

# Structure of Master Curriculum



Internship periods offer the student opportunity to become an expert on species and traits of interest to the company.

# Curriculum

M1 YEAR At LaSalle Beauvais	
INTRODUCTIVE MODULE PROPAGATION SYSTEMS AND INTRODUCTION TO SEED BUSINESS	2 CREDITS
MODULE 1 PLANT REPRODUCTION SYSTEMS	2 CREDITS
MODULE 2 PLANT GENETICS	2 CREDITS
MODULE 3 GENETIC RESOURCES AND DIVERSITY	5 CREDITS
MODULE 4 BREEDING STRATEGIES AND METHODS	5 CREDITS
MODULE 5 PHENOTYPING	5 CREDITS
PILOT CASE DESIGN A BREEDING PROJECT	8 CREDITS

M1 YEAR At LaSalle Beauvais	
MODULE 6 POPULATION AND QUANTITATIVE GENETICS	4 CREDITS
MODULE 7 IP PRINCIPLES AND RATIONALE	2 CREDITS
MODULE 8 REGULATION GUIDELINES	2 CREDITS
M2 YEAR At Ghent University	
MODULE 1 CELL BIOLOGY BASED TOOLS	6 CREDITS
MODULE 2 MOLECULAR BIOLOGY BASED TOOLS	6 CREDITS
MODULE 3 BIOINFORMATICS	5 CREDITS
MODULE 4 BREEDING STRATEGIES AND METHODS	5 CREDITS
PILOT CASE DESIGN A BREEDING PROJECT	10 CREDITS

1 credit = 1 ECTS (European Credit Transfer System)

## ADMISSION

• Selection will be based on academic background (Bachelor degree or equivalent) in a relevant field of science (Plant Science, Genetics or Biology) with a cumulative grade point average which is at least 70% of the highest grade achievable.

A motivation interview is mandatory. B2 level CEFR is required in English.

- Numerus Clausus : 20
- Application deadlines : December 15<sup>th</sup>, February 15<sup>th</sup>, April 15<sup>th</sup>
- Start of the program : 1st week of September (please be aware of visa processing times).

## FEES AND ACCOMODATION

- Annual fees : 12500 euros
- Companies (diploma in-service training and accreditation for work experiences) : 16000 euros

Please contact us for specific enquiries (tailor-made academic training course in Plant Breeding and Biotechnology).

Housing is available on campus.

The general terms and conditions of Institut Polytechnique LaSalle apply to all activities on the LaSalle Campus. The general terms and conditions of Ghent University apply to all activities on the Ghent Campus.



### To reach Beauvais

- by plane : campus is located 5 min from Beauvais Airport with low cost connection flights to many destinations in Europe
- by car : 45 min from Paris- Charles de Gaulle Airport
- by train : 1h15 from Paris Gare du Nord

### To reach Ghent

- by plane : 1h from Brussels airports Airport with many connection flights to many destinations in Europe and worldwide
- by car : 2h30 from LaSalle Beauvais
- by train : 2h from Paris Gare du Nord

# LaSalle★

Beauvais • Institut Polytechnique

Sciences de la Terre, du Vivant et de l'Environnement

### Contact /

**Institut Polytechnique**

**LaSalle Beauvais**

19, rue Pierre Waguet - BP 30313

60026 Beauvais Cedex

**TEL:** + 33 3 44 06 25 25

Program Coordinator:

**Dr Jean-Paul Reynoird**

Expertise in Agri/horticulture and Biotechnology

Experience in Business development

**TEL:** + 33 3 44 06 96 15

**E-MAIL:** jean-paul.reynoird@lasalle-beauvais.fr

### Contact Admissions /

**Ludivine Brun**

**TÉL :** + 33 3 44 06 76 07 **FAX:** + 33 3 44 06 38 38

**E-MAIL:** ludivine.brun@lasalle-beauvais.fr

**Wim Hoste**

International Training Center Director

**TÉL:** + 32 9 264 31 00 **FAX:** + 32 9 264 62 44

**E-MAIL:** wim.hoste@ugent.be

[www.lasalle-beauvais.fr](http://www.lasalle-beauvais.fr)

Institutions that support us

