

## CAREERS OPTIONS AND PROFILES

The Master's Degree Programme in Agricultural Engineering trains specialist engineers able to deal with the **complexity of the agro-industrial production systems** and with the interdependence of critical elements related to the **safety and sustainability of the agri-food systems** such as:

- **planning and management of production and supply chain systems;**
- emerging technologies to **support agro-industrial production;**
- **interaction with the environment and the territory.**

Graduates in Agricultural Engineering will apply advanced and transversal engineering skills on the system as a whole, allowing them to **guide strategic choices** with the support of more specialized figures, which they do not replace.

The **professional prospects** of the agricultural engineer are in:

- companies in the **agricultural and agri-food production chain;**
- companies that design, develop and implement processes, **plants and technologies to support production, distribution and marketing related to agriculture and agro-industry;**
- **consultancy firms for the environment, safety, agricultural and livestock production;**
- public and private **research centres** and laboratories;
- technical departments of **public administration.**

## CONTACTS

**Prof. Gianni Ferretti**  
gianni.ferretti@polimi.it

**Prof. Luca Bascetta**  
luca.bascetta@polimi.it

segreteria-cremona@polimi.it

[www.age.polimi.it](http://www.age.polimi.it)  
[www.facebook.com/agriculturalengineering.polimi](https://www.facebook.com/agriculturalengineering.polimi)



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# MASTER OF SCIENCE AGRICULTURAL ENGINEERING



## AGRICULTURAL ENGINEER

The Master's Degree Programme in Agricultural Engineering, designed and taught in English at the Cremona Campus, in collaboration with the Università Cattolica del Sacro Cuore, aims to train engineers working in the agro-industrial sector with a systems-oriented vision, such as an approach to the study and implementation of application solutions based on an overall vision of the technological aspects of the supply chain elements, on the ability to model and manage the interactions between the various components, supported by basic knowledge of the sector.

The growing technological complexity, both technical, engineering, managerial and organizational, requires professionals capable to manage the complexity of agricultural and agro-industrial production systems, with a strong multidisciplinary connotation, and to combine technological innovation in agriculture and animal production, with the increasing level of sustainability and food safety.



## ORGANIZATION OF THE STUDY PROGRAMME

Students face a differentiated training path on the basis of the three-year degree course of origin, in order to acquire the knowledge necessary for the specialist training of Agriculture Engineer.

During the first semester of the first year, students coming from an **engineering curriculum** acquire **basic knowledge related to animal and plant primary production, biochemistry and microbiology**, while those with **non-engineering training** acquire knowledge related to the **fundamentals of automation and computer science, advanced mathematical analysis and applied physics**.

The differentiation of the first semester is essential to form a common knowledge base for all students: **basic knowledge in the agrarian field are essential to understand the related aspects to the principles of primary production**, while learning of **engineering knowledge and skills are indispensable for understanding the technologies for the “Smart Agriculture”**.

The second semester of the first year is dedicated to learning knowledge of the ICT area, relating in particular to **automation and robotics techniques; to the methods and to the Big Data Analytics and artificial intelligence applications; technologies for traceability**, essential for guarantee **food safety**; to the knowledge of the area of industrial engineering applied to **agriculture 4.0**, with particular attention to the types of vehicles and machinery used in agriculture; related issues to the **electrification of traction and autonomous driving**. The second year is dedicated to achieving the objectives training courses in the **industrial, environmental and management areas**.



## ADMISSION TO THE MASTER'S DEGREE

Admission to this Master's Degree course is subject to an **evaluation process** that aims to verify the eligibility of the applicant. All three-year graduates **in the classes of Industrial Engineering, Information Engineering, Civil and Environmental Engineering or Agricultural and Forestry Sciences and Technologies** can be admitted. **Alternatively**, it is necessary to have a **three-year degree**, for example in Chemistry or Physics or Biology, having sustained at least **40 University Educational Credits** in specific Scientific Disciplinary Sectors which are detailed in the Educational Rules. Detailed information on deadlines, application procedures and requirements is available in the menu “Come si accede” and “International prospective students” on the **Poliorientami** Website.

## INFO

**Agricultural Engineering** is the first Master's Degree in Engineering in Italy dedicated to the technological innovation of agro-industrial systems and one of the few courses of its kind in the world. It is delivered in the context of excellence of the Politecnico di Milano which boasts prestigious international collaborations with other university institutes.