

Goals

This Degree grants the Agricultural Engineer profession attributions. Comprehensive agronomic training for the practice and technical and economic management of agriculture and related activities.

Target group

The student may directly get enrolled in this Master Degree from the UPM Bsc. Degrees: 'Bsc. Degree in Agricultural Science and Engineering', 'Bsc. Degree in Food Engineering', 'Bsc. Degree in Agro-Environmental Engineering' and 'Bsc. Degree in Agricultural Engineering'.

The student may also get enrolled in this Master Degree from any other Spanish University granting attributions in some of the branches of the Technical Agricultural Engineer profession.

Besides, the student may also get enrolled in this Master Degree from other Degrees by providing educational training (The ETSIAAB Academic Committee will define the adequate educational complements for each case).

Furthermore, it is mandatory to submit evidence of a B2 level in the English language to get enrolled in this Master Degree, in conformance with the UPM policy.

Why studying this Master Degree?

This Master Degree provides both attributions as an Agricultural Engineer and access to doctoral studies. Furthermore, it allows the competition for the Body of Agricultural Engineers in the Administration. Its educational programme allows a double Master Degree during its two years: with a Master Degree in Agricultural, Food and Natural Resource Economics or other Master Degrees from the University of Cranfield (United Kingdom) and the Illinois Institute of Technology (USA). Carrying out external internships promotes a good initial vision of the professional-business sector or the research field, according to the student's interests.

Branch: Engineering and Architecture
Area: Agroforestry Engineering and Environment
Orientation: Professional
Credits: 120 ECTS
Duration: 4 Semesters
Modality: Presence-based
Number of places: 150
Language: Spanish



Contact details:

Escuela Técnica Superior de Ingeniería Agronómica,
Alimentaria y de Biosistemas (ETSIAAB)
masterhabilitante.etsiaab@upm.es
Subdirección de Ordenación Académica:
secretaria.postgrado.etsiaab@upm.es
Tel. 910 670 766
More information and registration:
www.etsiaab.upm.es/Docencia/Masteres/Habilitante



Escuela Técnica Superior de Ingeniería
Agronómica, Alimentaria y de Biosistemas

MSc Degree in Agricultural Engineering



UNIVERSIDAD
POLITÉCNICA
DE MADRID



ESCUELA TÉCNICA SUPERIOR
DE INGENIERÍA AGRONÓMICA,
ALIMENTARIA Y DE BIOSISTEMAS

MSc Degree in Agricultural Engineering

ETSIAAB

Structure

MÓDULO I	COMPULSORY COURSES	(72 ECTS)
MÓDULO II	BRANCH ELECTIVE COURSES	(Up to 36 ECTS)
MODULO III	EXTERNAL INTERNSHIPS (NOT COMPULSORY)	(Up to 12 ECTS)
MODULO IV	FINAL MASTER DEGREE PROJECT	(12 ECTS)

Curriculum

COMPULSORY COURSES	ECTS	SEM
Intensive Vegetable Production	6	1
Animal Production Engineering	6	1
Project Engineering	5	1
Statistics Applied to Agricultural Engineering	5	1
Marketing & Marketing Research	4	1
Agricultural Policy and Rural Development	4	1
Biotechnology and Plant Breeding	6	2
Management of Farm Machinery and Equipment	4	2
Rural Constructions and Infrastructures	4	2
Rural and Landscape Planning	4	2
Irrigation Systems and Water Resources Management	4	2
Animal Production Management	4	2
The Quality Management and Food Safety	4	2
Food Productions Industry Systems	6	3
Business Administration and Logistics	6	3

Two compulsory courses of 6 ECTS each are included in the third semester.

The rest of the credits, up to 30 ECTS corresponding to the semester, can be studied as elective courses through external internships or a combination of both. Elective courses are conditioned to a minimum number of students enrolled.

This Master Degree enables to undertake the Agricultural Engineer profession. A double Master Degree may be carried out.

ELECTIVE COURSES	ECTS	SEM
Fruit Culture	4	3
Cropping Systems Management	4	3
Gardening	4	3
Plant Breeding	4	4
Crop Diseases: Emergence and New Control Strategies	4	4
Integrated Pests Management Crops	4	4
Engineering of Livestock Holding Design	4	3
Precision Livestock Farming	4	3
Livestock Impacts on the Environment	4	3
Application of Biotechnology to Livestock	4	4
Construction of Accommodation and Livestock Facilities	4	4
Diet Formulation and Feed Manufacture for Livestock	4	4
Concrete Structures	4	3
Advanced Elements in Farm Machinery	4	3
Precision Agriculture	4	3
Energy and Water Efficiency in Distribution Systems	4	4
Energy Supply and Automation Facilities	4	4
Agrogeomatics	4	4
Bioenergy	4	3
Management of Plant Diversity of the Agricultural System	4	3
Degradation, Conservation and Rehabilitation of Soils	4	3
Design and Construction of Sewage Treatment Plants in Rural Areas	4	4
Diffuse Agricultural Pollution Management	4	4
Management, Treatment and Use of Wastewater and Organic Waste in Agriculture	4	4

ELECTIVE COURSES	ECTS	SEM
Modern Animal Processing Industries Technologies	4	3
Modern Vegetable Processing Industries Technologies	4	3
Agroindustrial Buildings	4	3
Utilization and Valorisation of Byproducts from the Food Industry	4	4
Hygienic Food Industry Engineering and Design	4	4
Biotechnology of Microorganisms Relevant for Agrofood Industry	4	4
Applied Microeconomics	4	3
Environmental Economics and Policy	4	3
Agriculture and Development	4	3
Social Research Tools	4	4
Risk Management	4	4
Creation of Companies	4	4

Depending on the number of students enrolled, the number of elective courses may vary from year to year. A minimum of 5 students must be registered to teach an elective course.

Enrolment in the Double Master with the MSc Degree in Economics of Agriculture, Food and Natural Resources means that students must take elective courses in agricultural economics (24 ECTS), with 12 ECTS available for other elective courses and/or professional internships.

EXTERNAL INTERNSHIPS (Elective)	ECTS	SEM
External Internships	Up to 12	Undefined

FINAL MASTER DEGREE PROJECT	ECTS	SEM
Final Master Degree Project	12	Undefined