

Bachelor's degree in Agronomic Science Engineering

On the **bachelor's degree in Agronomic Science Engineering** (which merges the content that had until now been taught on the bachelor's degrees in Agricultural Engineering and Agricultural, Environmental and Landscape Engineering), you will acquire the scientific and technological knowledge to design, plan, supervise and manage processes related to agricultural and livestock production; food quality control and safety mechanisms; the economic viability of farming companies; actions for environmental and landscape preservation and improvement; spatial planning; and fruit and vegetable production.

You can choose between two majors:

Horticulture and Gardening. You will receive multidisciplinary training in areas such as environmental management systems; water use; landscape design; implementation of green spaces; ecosystems and biodiversity; fruit and vegetable production; and plant propagation and nursery techniques. You will also learn the fundamentals of engineering technology, which will enable you to design green spaces and carry out environmental conservation and improvement, landscaping and fruit and vegetable production projects.

Agricultural Production. You will receive training in animal health, nutrition and welfare; livestock production systems; extensive farming and fruit and vegetable production; irrigation technology; agricultural machinery and buildings; crop protection; waste management; agroecology; and organic food production.

Majors

- Horticulture and Gardening
- Agricultural Production

GENERAL DETAILS

Duration

4 years

Study load

240 ECTS credits (including the bachelor's thesis). One credit is equivalent to a study load of 25-30 hours.

Delivery

Face-to-face

Fees and grants

Approximate fees per academic year: €1,660 (€2,490 for non-EU residents). [Consult the public fees system based on income \(grants and payment options\).](#)

Location

[Barcelona School of Agri-Food and Biosystems Engineering \(EEABB\)](#)

Official degree

[Recorded in the Ministry of Education's degree register](#)

ADMISSION

Places

60

Registration and enrolment

[What are the requirements to enrol in a bachelor's degree course?](#)

Legalisation of foreign documents

PROFESSIONAL OPPORTUNITIES

Professional opportunities

- Technical management of agricultural and livestock farms and plant nurseries.
- Freelance work: projects, consulting, advice, appraisals, site management, environmental studies, surveying applications, occupational health and safety studies, etc.
- Public administrations (European Union, Spain, autonomous communities, city councils): rural development; spatial planning and management of rural areas; planning and management of green spaces and sports areas; management and use of municipal waste; and restoration and recovery of natural spaces.
- Agricultural service companies: agricultural and livestock facilities, rural infrastructure, agricultural machinery, seeds, pesticides, fertilisers, irrigation systems, computer technologies for agriculture, quality control, etc.
- Management and handling of water resources for agricultural use and agroenergy resources and use of agricultural waste.
- Management of agricultural companies and cooperatives and marketing and sales.
- Environmental and landscaping service companies: environmental impact and restoration studies and design of gardens and green spaces.
- Research and development in companies and public bodies: agricultural biotechnology, rural development, agricultural economics, food engineering, rural engineering, environmental management, and animal and crop production.

ORGANISATION: ACADEMIC CALENDAR AND REGULATIONS

Academic calendar

[General academic calendar for bachelor's, master's and doctoral degrees courses](#)

Academic regulations

[Academic regulations for bachelor's degree courses at the UPC](#)

Language certification and credit recognition

Queries about [language courses and certification](#)

Barcelona School of Agri-Food and Biosystems Engineering (EEABB)

CURRICULUM

Subjects	ECTS credits	Type
FIRST SEMESTER		
Chemistry I	6	Compulsory
Drawing for Engineering	6	Compulsory
General Biology	6	Compulsory
Mathematics I	6	Compulsory
Physics I	6	Compulsory

Subjects		ECTS credits	Type
Major in (Eng) Menció Producció Agropecuària+Hortofructicultura i Jardineria +	Chemistry I	6	Compulsory
	Drawing for Engineering	6	Compulsory
	General Biology	6	Compulsory
	Mathematics I	6	Compulsory
	Physics I	6	Compulsory
Major in (Eng) Optativitat Menció Hortofructicultura i Jardineria	Chemistry I	6	Compulsory
	Drawing for Engineering	6	Compulsory
	General Biology	6	Compulsory
	Mathematics I	6	Compulsory
	Physics I	6	Compulsory
Major in (Eng) Optativitat Menció Producció Agropecuari	Chemistry I	6	Compulsory
	Drawing for Engineering	6	Compulsory
	General Biology	6	Compulsory
	Mathematics I	6	Compulsory
	Physics I	6	Compulsory
SECOND SEMESTER			
	Chemistry II	6	Compulsory
	Earth Sciences	6	Compulsory
	Mathematics II	6	Compulsory
	Physics II	6	Compulsory
	Plant Biology	6	Compulsory
Major in (Eng) Menció Producció Agropecuària+Hortofructicultura i Jardineria +	Chemistry II	6	Compulsory
	Earth Sciences	6	Compulsory
	Mathematics II	6	Compulsory
	Physics II	6	Compulsory
	Plant Biology	6	Compulsory
Major in (Eng) Optativitat Menció Hortofructicultura i Jardineria	Chemistry II	6	Compulsory
	Earth Sciences	6	Compulsory
	Mathematics II	6	Compulsory
	Physics II	6	Compulsory
	Plant Biology	6	Compulsory
Major in (Eng) Optativitat Menció Producció Agropecuari	Chemistry II	6	Compulsory
	Earth Sciences	6	Compulsory
	Mathematics II	6	Compulsory
	Physics II	6	Compulsory
	Plant Biology	6	Compulsory
THIRD SEMESTER			
	Cropping Systems	6	Compulsory

Subjects		ECTS credits	Type
Energy Systems and Components		6	Compulsory
Foundations of Plant Production		6	Compulsory
Hydraulics		6	Compulsory
Statistics		6	Compulsory
Major in (Eng) Menció Producció Agropecuària+Hortofructicultura i Jardineria +	Cropping Systems	6	Compulsory
	Energy Systems and Components	6	Compulsory
	Foundations of Plant Production	6	Compulsory
	Hydraulics	6	Compulsory
	Statistics	6	Compulsory
Major in (Eng) Optativitat Menció Hortofructicultura i Jardineria	Cropping Systems	6	Compulsory
	Energy Systems and Components	6	Compulsory
	Foundations of Plant Production	6	Compulsory
	Hydraulics	6	Compulsory
	Statistics	6	Compulsory
Major in (Eng) Optativitat Menció Producció Agropecuari	Cropping Systems	6	Compulsory
	Energy Systems and Components	6	Compulsory
	Foundations of Plant Production	6	Compulsory
	Hydraulics	6	Compulsory
	Statistics	6	Compulsory
FOURTH SEMESTER			
Agricultural Mechanisation		6	Compulsory
Animal Production		6	Compulsory
Geomatics		6	Compulsory
Market Analysis and Agricultural Valuation		6	Compulsory
Plant Genetics and Breeding		6	Compulsory
Major in (Eng) Menció Producció Agropecuària+Hortofructicultura i Jardineria +	Agricultural Mechanisation	6	Compulsory
	Animal Production	6	Compulsory
	Geomatics	6	Compulsory
	Market Analysis and Agricultural Valuation	6	Compulsory
	Plant Genetics and Breeding	6	Compulsory
Major in (Eng) Optativitat Menció Hortofructicultura i Jardineria	Agricultural Mechanisation	6	Compulsory
	Animal Production	6	Compulsory
	Geomatics	6	Compulsory
	Market Analysis and Agricultural Valuation	6	Compulsory
	Plant Genetics and Breeding	6	Compulsory

Subjects		ECTS credits	Type
Major in (Eng) Optativitat Menció Producció Agropecuàri	Agricultural Mechanisation	6	Compulsory
	Animal Production	6	Compulsory
	Geomatics	6	Compulsory
	Market Analysis and Agricultural Valuation	6	Compulsory
	Plant Genetics and Breeding	6	Compulsory
FIFTH SEMESTER			
Crop Protection		6	Compulsory
Economics and Business Administration		6	Compulsory
Horticultural Technology		6	Compulsory
Major in (Eng) Menció Producció Agropecuària+Hortofructicultura i Jardineria +	Animal Feeding and Nutrition	6	Compulsory
	Implementation and Management of Green Spaces	6	Compulsory
	Landscape History and Composition	6	Compulsory
	Ruminant Livestock Production	6	Compulsory
	Crop Protection	6	Compulsory
	Economics and Business Administration	6	Compulsory
	Horticultural Technology	6	Compulsory
Major in (Eng) Optativitat Menció Hortofructicultura i Jardineria	Implementation and Management of Green Spaces	6	Compulsory
	Landscape History and Composition	6	Compulsory
	Crop Protection	6	Compulsory
	Economics and Business Administration	6	Compulsory
	Horticultural Technology	6	Compulsory
Major in (Eng) Optativitat Menció Producció Agropecuàri	Animal Feeding and Nutrition	6	Compulsory
	Ruminant Livestock Production	6	Compulsory
	Crop Protection	6	Compulsory
	Economics and Business Administration	6	Compulsory
	Horticultural Technology	6	Compulsory
SIXTH SEMESTER			
Environmental Studies of Projects		6	Compulsory
Horticultural Production		6	Compulsory
Irrigation and Drainage Technology		6	Compulsory
Major in (Eng) Menció Producció Agropecuària+Hortofructicultura i Jardineria +	Grain and Biomass Crops	6	Compulsory
	Landscape Design	6	Compulsory
	Monogastric Animal Production	6	Compulsory
	Multiplication and Nurseries	6	Compulsory
	Environmental Studies of Projects	6	Compulsory
	Horticultural Production	6	Compulsory
	Irrigation and Drainage Technology	6	Compulsory

Subjects		ECTS credits	Type
Major in (Eng) Optativitat Menció Hortofructicultura i Jardineria	Landscape Design	6	Compulsory
	Multiplication and Nurseries	6	Compulsory
	Environmental Studies of Projects	6	Compulsory
	Horticultural Production	6	Compulsory
	Irrigation and Drainage Technology	6	Compulsory
Major in (Eng) Optativitat Menció Producció Agropecuària	Grain and Biomass Crops	6	Compulsory
	Monogastric Animal Production	6	Compulsory
	Environmental Studies of Projects	6	Compulsory
	Horticultural Production	6	Compulsory
	Irrigation and Drainage Technology	6	Compulsory
SEVENTH SEMESTER			
Advanced Statistics		6	Optional
Construction and Structural Design		6	Compulsory
Economic Botany		6	Optional
Entrepreneurship in the Agri-Food Sector		6	Optional
Life-Cycle Assessment of Products and Processes		6	Optional
Organic Agriculture		6	Optional
Viticulture		6	Optional
Work Placement		12	Optional
Major in (Eng) Menció Producció Agropecuària+Hortofructicultura i Jardineria +	Agroecology	6	Compulsory
	Postharvest and Logistics	6	Compulsory
	Advanced Statistics	6	Optional
	Construction and Structural Design	6	Compulsory
	Economic Botany	6	Optional
	Entrepreneurship in the Agri-Food Sector	6	Optional
	Life-Cycle Assessment of Products and Processes	6	Optional
	Organic Agriculture	6	Optional
	Viticulture	6	Optional
	Work Placement	12	Optional

Subjects		ECTS credits	Type
Major in (Eng) Optativitat Menció Hortofructicultura i Jardineria	Postharvest and Logistics	6	Compulsory
	Advanced Statistics	6	Optional
	Construction and Structural Design	6	Compulsory
	Economic Botany	6	Optional
	Entrepreneurship in the Agri-Food Sector	6	Optional
	Life-Cycle Assessment of Products and Processes	6	Optional
	Organic Agriculture	6	Optional
	Viticulture	6	Optional
	Work Placement	12	Optional
Major in (Eng) Optativitat Menció Producció Agropecuari	Agroecology	6	Compulsory
	Advanced Statistics	6	Optional
	Construction and Structural Design	6	Compulsory
	Economic Botany	6	Optional
	Entrepreneurship in the Agri-Food Sector	6	Optional
	Life-Cycle Assessment of Products and Processes	6	Optional
	Organic Agriculture	6	Optional
	Viticulture	6	Optional
	Work Placement	12	Optional
EIGHTH SEMESTER			
Projects		6	Compulsory
Treatment and Use of Waste and Water		6	Compulsory
Bachelor's Thesis		18	Project
Major in (Eng) Menció Producció Agropecuària+Hortofructicultura i Jardineria +	Projects	6	Compulsory
	Treatment and Use of Waste and Water	6	Compulsory
	Bachelor's Thesis	18	Project
Major in (Eng) Optativitat Menció Hortofructicultura i Jardineria	Projects	6	Compulsory
	Treatment and Use of Waste and Water	6	Compulsory
	Bachelor's Thesis	18	Project
Major in (Eng) Optativitat Menció Producció Agropecuari	Projects	6	Compulsory
	Treatment and Use of Waste and Water	6	Compulsory
	Bachelor's Thesis	18	Project