A.D. 1308 unipg
UNIVERSITÀ DEGLI STUDI DI PERUGIA

A.D. 1308 unipg
DEPARTMENT OF AGRICULTURAL, FOOD AND ENVIRONMENTAL SCIENCES

MASTER DEGREE COURSE IN SUSTAINABLE AGRICULTURE

Duration
2 years

4

ECTS
120

Course Coordinator

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Teaching goals

The Master Degree Course in Sustainable Agriculture aims to train graduates with a solid multidisciplinary scientific training and with adequate professional knowledge necessary to carry out activities of sustainable management of agricultural production, planning, management, and evaluation of projects for the sustainable development of rural areas and the enhancement of the sustainability of the primary sector. Furthermore, the course will focus on graduates' training capable of competently carrying out the activities of a professional with the functions of an "agronomist". The "Environmental economics and circular economy" course will be in English.

The course is divided into three curricula: Organic and eco-compatible agriculture; Bioeconomy; Territory and Landscape. The student chooses the curriculum with the enrollment in the 2nd year.

The Organic and Eco-compatible Agriculture curriculum focuses on the eco-compatible and biological management of agroecosystems. In this context, the study focuses on managing the complexity of production systems from an eco-compatible perspective.

The Bioeconomy curriculum is oriented to the challenges of the Bioeconomy and Circular Economy, which require a professional in-depth study of Managerial Sciences and Community Agricultural Policy for the conception and management of new entrepreneurial paths aimed at the sustainability of production processes.

The Territory and Landscape curriculum aims to dynamically integrate the development of agro-productive socio-ecosystems with the sustainable use of environmental resources, training professionals capable of designing, implementing, and managing interventions to address the transformations of the territory, landscape, and urban greenery.

Courses and ECTS	
Pedology and Chemistry of the Agro-Ecosystem	9
Hydrology and water supply	9
Experimental methods in agriculture	6
Landscape survey and mapping	6
Environmental economics and circular economy	9
English (level B2)	3
Elective	8
Stage in preparation for the final examination	4
Final Dissertation	16
***CURRICULUM:* ORGANIC AND ECO-COMPATIBLE AGRICULTURE**	
Organic and sustainable cropping systems	9
Precision agriculture	10
Integrated and organic pest management	10
Eco-Sustainable weed management	6
Biodiversity conservation and management	9
Food policies	6
***CURRICULUM*: BIOECONOMY**	
Business management and Agri-food policy	10
Rural appraisal and project management	10
Food economics and marketing	6
Design and construction	9
Food processing technology	6
Innovative production systems for the agro-Industry	9
***CURRICULUM*: TERRITORY AND LANDSCAPE**	
Soil assessment and conservation	6
Watershed management for land protection	10
Water resources management and technical activities	6
Landscape planning and design	10
Use and protection of plant species of landscape interest	12
Environmental arboriculture and tree biomechanics	6

Learning Objectives

Graduates will have to achieve in-depth scientific knowledge of the systemic "soil-plant-atmosphere" interactions typical of agricultural and agri-food production and will be able to manage the use of the resources involved in agricultural production to guarantee the sustainability of production, quality of the environment, and life in rural areas in an increasingly close and multifunctional relationship with urban agglomerations and the most anthropized areas of the planet.

Graduates will acquire professional knowledge and skills to:

- to devise and manage project initiatives for the eco-compatible use of agro-environmental resources with ample autonomy through hydraulic interventions, hydrogeological risk mitigation, reclamation, naturalistic engineering, and solutions based on nature, planning, and management of water resources and of the landscape, including urban ones.
- to elaborate balances: water and irrigation, environmental, nutritional, economic, and fertilization;
- to develop integrated adversity control systems; risk analysis of inorganic and organic pollutants and soil degradation and the development of related actions for remediation;
- to implement models, expert systems, and methods for monitoring all the parameters of environmental interest of the "soil-plant-atmosphere" system;
- to develop projects for the safeguarding and conservation of plant and microbial biodiversity;
- planning, managing, evaluating projects related to the enhancement of agricultural production, which from the analysis of the consumption of agri-food goods reaches the strategies of business development, distribution policies, prices, and the promotion of the demand for agri-food products;
- to analyze and manage projects and works relating to the development of rural areas, also using mathematical models and IT and telematic tools;
- to develop procurement and certification projects for agro-food products for the management of food safety;
- to organize and manage businesses in the food supply chains and consultancy and service businesses connected to them, using appropriate methods of economic analysis;
- to carry out projects relating to agricultural, rural, and environmental policy;
- to produce estimates of private assets and environmental assets with appropriate methods and operating tools to arrive at an assessment of environmental impact and incidence;
- to deal with general taxation, private law, company law, agricultural law, and community legislation about the sector of agricultural enterprises and related services.

The training course includes, in addition to lectures, seminars, practical exercises in the laboratories, study visits, professional internships at facilities affiliated with the DSA3. Furthermore, the student will be able to personalize her/his preparation with 8 elective credits and the opportunity to spend study periods at other affiliated European universities.

Skills and career opportunities

The professional opportunities of the graduate in Sustainable Agriculture are foreseen in the agricultural, environmental and sustainable development of the territory, with particular expertise in the management of agroecosystems, in economic-environmental analysis, in environmental and territorial assessments, in the development of environmental policies, and for sustainable development. These outlets find application in business service activities in public administration, in research institutions, in international organizations.

Graduates can work in the following fields: service, consultancy, and management activities in agricultural companies, enterprises, and public and private entities; research at public and private research institutions; free profession, through registration in the Order of Agronomists and Foresters; Ministries of the Environment and Agricultural and Forestry Policies; Regional agencies for the protection of the environment, of the Regions, Provinces and Municipalities; consultancy activities for companies and professional firms active in the sector of recovery of marginal areas, treatment and recycling of biomass, design of areas for reforestation and preparation of green spaces, environmental impact assessment.

The graduate's professional profile falls within that envisaged for the profession of senior agronomist regulated by the Presidential Decree 328/2001 and subsequent amendments. Concerning the Nomenclature and Classification of ISTAT Professional Units, for graduates in Agricultural and Environmental Sciences, job opportunities are identified in the field of technical professions (level 3) and, more particularly, in the technical professions in the life sciences (3.2.2), such as that of agricultural technicians (3.2.2.1 .1), in environmental control and the context of teachers in professional training.