COURSE OF STUDY Techniques for Sustainable Agriculture

ACADEMIC YEAR *2024-2025*

Other useful knowledge for entering the world of work (30 CFU),

Laboratory of tools for the implementation of the common agricultural policy (5 CFU)

Main information about the course	
Course year	*II year*
Disbursement period	*II semestre 2025*
University credits (CFU/ETCS):	*5*
SSD	*Rural Economics and Appraisal AGR/01*
Language of instruction	*Italian*
Frequency Modes	*Optional*

Teacher	
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Seat	Via G. Amendola, 165/a – 70126 Bari
Virtual Location	
Reception	Monday afternoon from 3 pm to 6 pm or by appointment

Organization of teaching			
Hours			
Total	Lectures	Practice (Lab, Field, Tutorial, Other)	Self-study
Ex. 150	*32*	*28*	*90*
CFU/ETCS			
Ex. 6	*4*	*2*	

Learning objectives	*The Degree Programme (CdS) in Techniques for Sustainable Agriculture (TAS) aims to train technicians able to guarantee technical/professional activities related to agricultural systems. In particular, the CdS provides students with methods and techniques that allow them to face the challenges related to new technologies, which characterize sustainable agriculture in this millennium with an approach that, as understood at an international level, provides methods and tools aimed at preserving "natural capital" in the definition of production processes also considering the growing need to increase production by reducing the environmental impacts of processes Involved. Qualified technicians, able to manage specific technical/professional activities, will have: - adequate knowledge of agricultural systems to operate according to the most up-to-date agronomic techniques; - the ability to operate by limiting the environmental impact of production according to the paradigms of sustainability, taking advantage of advances in science, technology, including in the field of information and communication; - the ability to operate by making agronomic systems as compatible as possible with natural and forest systems according to the principles of biodiversity conservation present in the now consolidated Community policy; - the skills to be able to provide technical assistance in the agricultural sector in its structural and functional complexity. The graduate: - will have knowledge of business information systems and concepts of precision agriculture; - will be able to describe and quantify spatial and temporal*

	variability in agricultural processes; - will be able to use the most up-to-date information technologies, platforms, sensors and analysis methods for the representation of the territory, also with regard to the mapping of productions; - will know and be able to use methods, sensors and tools for proximal and remote survey and management (UAV, robotic systems, etc.) of soil and crops; - will know the main techniques of precision agriculture including: global positioning systems; autonomous driving systems for agricultural machinery; variable rate seeding, tillage and fertilization; irrigation and precision phytosanitary treatments; - will be able to evaluate the economic effects of precision farming techniques; - will be able to assess the impact of plans and works in the agricultural sector in terms of sustainability and environmental safety through approaches that allow less land consumption, waste reduction, recovery and reuse of biomass according to the principles of the circular economy; - will have knowledge of machines, plants, constructions, works and hydraulic arrangements that, if necessary, implement methods and techniques for monitoring and optimizing energy consumption also through the recovery and reuse of biomass; - will have knowledge of agro-industrial machines and plants with particular reference to operational, functional, environmental and energy saving aspects; - will have basic knowledge in the estimation, economic and legal fields; - will have specific knowledge of local production chains that enhance the development of production on a regional and local scale
Prerequisites	*No prior knowledge is required*

Teaching methods	*The topics of the course will be covered with the help of Power Point presentations.* *Distance learning systems through public platforms (e.g. Teams) and dedicated platforms (Agripodcast) can be used, on request for students with disabilities and in tutoring actions for students who are not engaged full-time (working students, student athletes and students with young children). The following will be promoted: self-learning, teamwork, self-assessment and the use of 4.0 technologies. For foreign students (LLP-Erasmus, Tempus, etc.) presentations may be written in English.*

Expected learning outcomes ***To be indicated for each Dublin Descriptor (DD=*** ***DD1*** **Knowledge and understanding**	*- Dublin Descriptor 1: Knowledge and understanding* *or Learn about the history of the CAP, the tools to implement rural development policy* *- Dublin Descriptor 2: Ability to apply knowledge and understanding* *Ability to carry out in groups or individually the simulation of the implementation of a policy instrument* *- Dublin Descriptor 3: critical and judgement skills.* *or understand and use the tools made available by rural development programmes, applying them to the contexts in which it operates, both at farm and institutional level* *Dublin Descriptor 4: Ability to communicate what has been learned* • *Communication skills* *At the end of the course, the student must be able to* *or expose and argue on territorial economic issues.* *or Communicate and report within a multidisciplinary working group with the ability to make judgments on both a technical and economic level.* *- Dublin Descriptor 5: Ability to continue studying independently throughout a lifetime*

***DD2* Applied knowledge and understanding** ***DD3-5* Soft Skills**	*Students are provided with the epistemological tools that will allow them to continue learning about the regulatory and organizational evolutions of the forms of territorial aggregation of agri-food companies* • *Ability to learn independently* *At the end of the course, the student must be able to* • *analyze the evolutionary phenomena of the relationship between business and territory*
Course content (Program)	*Rural development policy instruments for:* *promoting the competitiveness of agriculture;* *ensuring the sustainable management of natural resources and climate action;* *achieve a balanced territorial development of rural economies and communities, including the creation and maintenance of jobs.* *A brief summary of the economics of the agricultural farm* *The business plan as an essential tool for the design of rural development interventions* *Workshop for the co-creation of a business plan: active, passive situation before and after the project*
Referral texts	*European agricultural policy : history and analysis / Franco Sotte. – Florence : Firenze University Press, 2023.* *https://books.fupress.com/isbn/9791221500769*
Notes to reference texts	
Teaching materials	*The topics of the course will be covered with the help of Power Point presentations.*

Evaluation	
Assessment methods	*The exam consists of an oral test on the topics developed during the hours of theoretical and theoretical-practical lessons in the classroom as reported in the Didactic Regulations of the Master's Degree Course in and in the study plan (attachment A).* *The evaluation of the student's preparation takes place on the basis of pre-established criteria, as detailed in Annex A of the Didactic Regulations of the Master's Degree Course.* *For students who have taken the exemption test, the evaluation of the exam is expressed as the average between the grade reported in the exemption and in the exam.* *The exam for foreign students can be carried out in ENGLISH*
Assessment criteria	• *Knowledge and understanding:* • *Be able to correctly describe the concept of rural development policy.* • *Be able to describe the instruments of rural development policy* • *Applied knowledge and understanding:* • *Ability to critically analyze and apply the acquired knowledge.* • *professional ability to understand the elements necessary to design forms of intervention for companies.* • *Making judgements:* • *To be able to analyze problems related to different situations in a defined territorial context, such as to be able to carry out the activity of freelancer, junior agronomist.*

	• *Communication skills:* • *Be able to describe in detail with appropriate language and with adequate arguments the various aspects that characterize the forms of business aggregation.* • *Ability to learn:* • *Be able to apply the knowledge and skills acquired to solve problems in various professional contexts.* ○ *Be able to apply the study tools learned to update knowledge.*
Measurement criteria of learning and assignment of the final grade	*The evaluation of the student's preparation takes place on the basis of pre-established criteria, as detailed in Annex A of the Didactic Regulations of the Degree Course. For students who have taken the mid-term assessment test (called exemption), the evaluation of the exam is expressed taking into account the grade obtained with the exemption test not as an arithmetic average but as a weighted weight with respect to the program covered by the exemption test. The final grade will be awarded the final grade of the students who have acquired the knowledge acquired, the ability to apply the aforementioned knowledge, the autonomy of judgment, the communication skills and the ability to integrate the knowledge acquired into a work project.*
Other	
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