UNIVERSITÀ
degli STUDI
di CATANIA

TEACHING REGULATIONS
MASTER'S DEGREE in
AGRICULTURAL SCIENCE AND TECHNOLOGY

(LM-69- Scienze e tecnologie agrarie)

COORT 2024-2025

approvato dal Senato Accademico nella seduta del 26 marzo 2024

1. GENERAL INFORMATION
1.1 Department of Affiliation: Department of Agriculture, Food and Environment (Di3A)
1.2 Class: LM-69 – Agricultural Science and Technology
1.3 Teaching Venue: Catania, Via S. Sofia 100
1.4 Course Access: open
1.5 Language of the Course: English
1.6 Course Duration: two years

2. ADMISSION REQUIREMENTS

2.1 Curricular Requirements:

The curricular requirements for access are automatically met by graduates in class L-25 'Agricultural Sciences and Technology' and graduates in Agricultural Sciences and Technology in class 20 of the previous system, or an equivalent qualification obtained abroad. These requirements are also possessed by graduates in classes L-2 (Biotechnology), L-13 (Biological Sciences), L-21 (Sciences of planning and environmental sustainability of the territory and landscape), L-26 (Food Science and Technology), L-27 (Chemical Science and Technology), L-29 (Pharmaceutical Science and Technology), L-32 (Science and Technology for the Environment and Nature), L-38 (Animal Science and Technology of Animal Production) and corresponding classes of D. M. 509/1999 or equivalent foreign qualification provided that they have acquired in their previous university course at least 60 CFU in one or more of the scientific-disciplinary sectors AGR, MAT, INF, ING-INF, SECS-P, ICAR, FIS, BIO, VET and CHIM.

For admission to the course you must possess adequate language skills in English of level (at least) B2 of the Common European Framework of Reference for Languages (CEFR).

For admission to the course it is also necessary to possess knowledge of the Italian language equivalent to a level of no less than B2 of the CEFR. Foreign students not in possession of this requirement must include in their study plan educational activities aimed at achieving the objective of the course.

2.2 Admission Tests and Methods to Verify Adequacy of Preparation

Access is by non-programmed number. The adequacy of the candidate's initial preparation will be ascertained, by means of an oral interview, by a Commission appointed by Di3A. The interview will focus on the topics contained in a Syllabus published online on the degree course website, as well as on the candidate's motivation, ability to synthesise, mastery of the topics covered and communication skills.

2.3 Criteria for Recognition of Credits Obtained in Other Courses of Study:

On the basis of Article 12 of the University Didactic Regulations, the total or partial recognition, for the purposes of continuing studies, of credits acquired by a student in other universities or in another course of study is decided by the council of the course of study that receives the student, according to procedures and criteria that ensure the recognition of the greatest possible number of credits already accrued by the student and also by possibly resorting to interviews to verify the knowledge actually possessed. Failure to recognise credits must be adequately justified.

In the event that the student comes from a Master's degree course belonging to the same class, the proportion of credits relating to the same scientific-disciplinary sector directly recognised to the student may not be less than 50% of those already accrued.

In accordance with the University Teaching Regulations (art. 26), students who have obtained credits that can be recognised may submit an application for enrolment with an abbreviated career, on which the Course Council shall decide, establishing the CFUs to be recognised and, consequently, the course year in which the student may be enrolled. In the case of enrolment in a two-year degree course, only CFUs obtained in excess of those required for the degree may be recognised. Enrolled students who are already in possession of a degree at the same level may only be recognised a number of CFUs not exceeding half of the credits required to obtain the degree, net of the credits relating to the final examination, which are not recognised.

2.4 Criteria for Recognition of Professional Knowledge and Skills:

According to Article 12, paragraph 10, of the University Didactic Regulations, the Course Council may recognize as university educational credits, according to predetermined criteria, professional knowledge and skills certified under current legislation, and other knowledge and skills gained in post-secondary level educational activities in which the university has contributed to design and implementation, for a number not exceeding 12 CFU. For the recognition of CFUs, knowledge and skills must be consistent with the specific training objectives stated in the didactic regulations of the course of study. The Course Council has the task of identifying which educational activities can be replaced, based on a careful evaluation of the relevance and adequacy of such activities with the specific training objectives provided by the Course of Study itself. University educational credits can be recognized, in relation to the training path, only once. In any case, the number of such credits cannot exceed twelve (12 CFU).

2.5 Criteria for Recognition of Knowledge and Skills Gained in Post-Secondary Educational Activities Implemented with the University's Collaboration:

The Course Council may recognize as university educational credits the professional knowledge and skills certified, consistent with the training path, gained in post-secondary level educational activities in coherence with the provisions of the University Didactic Regulations.
2.6 Maximum Number of Recognizable Credits for the Reasons of Points 2.4 and 2.5 12 CFU

3. TEACHING ORGANIZATION

3.1 Attendance

Attendance at courses is not mandatory; however, it is strongly recommended as it facilitates the learning process and the evaluation of the student's performance. Students may be recognized as working students, athletes, or students in situations of vulnerability or with disabilities, upon presentation of a request, in compliance with the provisions of Article 30 of the University Teaching Regulations and the Regulations for the recognition of the status of working student, athlete student, student in difficult situations, and student with disabilities (D.R. No. 1598 of 2/5/2018) and by the Departmental Council of Di3A (resolution No. 3 of January 20, 2016). Specific forms of integrative educational support will be provided to these students, along with the opportunity to take exams in extraordinary sessions

3.2 Methods of Attendance Verification

Attendance is not mandatory but strongly recommended. The attendance of "actual" students, i.e., those who attend classes and are required to complete the OPIS questionnaire for the periodic evaluation of teaching, according to the rules indicated by ANVUR, will be recorded using methods delegated to the organizational autonomy of the teachers in charge of the teaching courses. It will be the responsibility of the teacher to communicate to the university offices such information regarding the teaching activities carried out, also through the teacher's opinions survey form provided by the University.

3.3 Teaching Methods

Teaching courses may include multiple modules, each of which refers to a different type of activity, corresponding to a different fraction of the total hourly commitment to activities assisted by the teacher, according to the following scheme:
(F) frontal lesson (in-person or online) = 7 hours of frontal classroom lessons per CFU;
(E) exercises (in-person or online) = 14 hours of assisted work in the classroom, laboratory, seminars, excursions per CFU.

3.4 Methods of Assessing Preparation

The method of assessing preparation varies with the courses. Assessment can be carried out through:

- oral examination (O);
- written examination (S);
- drafting of a technical paper (T);
- graphical test (G);
- practical test (P);
- intermediate oral and/or written test (PI).

The type of test, both intermediate and final, is chosen to allow the commission to assess in the most appropriate way the student's achievement of the expected learning outcomes.

3.5 Rules for the Presentation of Individual Study Plans

Students may obtain the degree according to an individual study plan that includes activities different from those provided by the teaching regulations, provided they are consistent with the didactic regulations of the study course of the academic year of enrollment.

3.6 Criteria for Periodic Verification of the Non-Obsolescence of Knowledge Contents

Specific criteria for periodic verification of the non-obsolescence of knowledge contents are not foreseen for courses related to D.M. 509/99 and D.M. 270/04, as resolved by the Department Council of Agriculture, Food and Environment, the reference didactic structure, on January 20, 2016.

3.7 Criteria for Verification of Credits Obtained More Than Six Years Ago

Credits obtained more than six years ago are considered fully valid if there have been no substantial changes to the content of the related teachings. Otherwise, the Course of Study Council must express itself according to the deliberations of the Department Council of Agriculture, Food and Environment, the reference didactic structure, in the meeting of January 20, 2016.

3.8 Criteria for Recognition of Studies Completed Abroad

Students may pursue part of their studies at foreign universities or equivalent institutions with which the university has established student mobility programs recognized by European Union universities and/or bilateral agreements providing for the award of recognized degrees by both parties. In accordance with Article 32 of the University Teaching Regulations, the Course of Study Council deliberates on the Learning Agreement presented by the student, specifying which educational activities are recognized and adequately justifying any activities that cannot be recognized. The resolution indicates the correspondence between the recognized educational activities and the curriculum of the study course and is not based on the more or less perfect correspondence of the contents between the teachings of the study course and those the student intends to pursue abroad, but verifies that the latter are consistent with the objectives of the class. The assessment is made on a scale of thirty and the conversion is in accordance with the provisions of the ECTS (European Credit Transfer and Accumulation System).

4. OTHER TRAINING ACTIVITIES

4.1 Student Choice Activities

Students may freely choose 12 credits from the educational activities offered by the University, provided that these are deemed by the Course of Study Council to be consistent with the educational project and not overlapping with activities already included in the study plan. The Course of Study Council evaluates individual requests submitted by students. Students' choices may also fall within a list of courses pre-approved annually by the Council, using the computerized career management system. To acquire these credits, passing the exam or another form of assessment is necessary.

4.2 Additional Training Activities (Article 10, paragraph 5, letters c, d of DM 270/2004)

a) Additional Language Skills

Not provided

b) Computer and Telematic Skills

Not provided

c) Training and Orientation Internships

Not provided

d) Other Skills Useful for Entering the Job Market

Overall, they amount to 1 CFU.

Students may submit a request for recognition of seminar activities aimed at orienting students to the world of work organized by the Department or certification for training and cultural activities, whether conducted with or without the University's involvement. These activities must:

• Refer to a period within the years of enrollment in the course and,

• Be considered consistent by the Course of Study Council with the objectives of the degree class.

Once the student has obtained certification for the activities carried out totaling 1 CFU, they may submit a recognition request in their career (in a single solution) by providing a brief written report on the activities they have participated in. The Office of Teaching, Student Services, and International Mobility will then book the student for the approval of credits on the academic record by a special commission appointed by the Course of Study Council.

4.3 Periods of Study Abroad

Educational activities pursued abroad are considered by the commission in the evaluation of the final exam, as specified in point 4.4.

4.4 Final Examination

The final exam, to which 22 CFU correspond, consists of drafting and publicly defending, before a Commission, an experimental thesis in English, prepared in an original manner by the candidate under the guidance of one or more supervisors, at least one of whom is a professor, also from another university.
The total amount of CFUs of the final examination may be derived from one of the following alternative methods:
a) Data acquisition totally carried out abroad 18 CFU; thesis writing: 4 CFU;
b) Data acquisition partly carried out abroad 9 CFU; data acquisition partly performed in Italy 9 CFU; thesis writing 4 CFU;
c) Data acquisition carried out entirely in Italy 18 CFU; thesis 4 CFU.
The final exam consists of preparing and discussing an experimental thesis elaborated in an original manner by the student demonstrating mastery of the topics and tools used, as well as the ability to work independently. For the preparation of the thesis, a significant number of CFUs must be allocated, as it is a qualifying moment of the training and a fundamental constituent element for the courses of the class.
The thesis discussion is public and takes place in front of a commission composed of no fewer than 5 and up to a maximum of 11 professors from the University, including adjunct professors, and chaired by the president of the Course of Study or by a teacher delegated by them. The supervisor, if not a member of the commission, participates in the proceedings only for the evaluation of the candidate they have guided.
The master's thesis can be written in Italian or in English; if written in Italian, it must contain an abstract in English. If written in English, it must contain an extended abstract written in Italian. The final exam is recorded electronically with the signature of the president and the secretary of the commission.
For matters not specified, reference is made to Article 22 of the current University Didactic Regulations.
The evaluation of the final exam for the awarding of the degree is expressed in one hundredth. In addition to the evaluation of the exam, the grade takes into account the grades obtained by the student in the educational activities of the entire course and any other relevant elements, particularly cultural maturity and the ability for personal intellectual elaboration and any international experiences. The thesis merit is attributed by the commission considering the exposition and mastery of the topic. The commission may assign a score ranging from 0 to 8 points based on the coherence between educational objectives and professional objectives, cultural maturity, and personal intellectual elaboration.
The overall curriculum merit is calculated by adding to the weighted average of the grades of the curriculum, expressed in one hundredth [(weighted average of the grades x 11) / 3)]:
0.2 points for each individual distinction;
2.0 points for a number of CFUs obtained abroad ≥ 12;
1.0 point if the student is in progress.
With regard to this last criterion, for students with specific learning disabilities (SLD), the normal course duration is increased by 1 year, and for students with disabilities, it is increased by 2 years. The commission may unanimously confer honors on a candidate who achieves the maximum score. For matters not specified, reference is made to Article 25 of the current University Teaching Regulations.

PROGRAMMED TEACHING (SUA-CDS)
LIST OF COURSES
Coort 2024-2025

n.	SSD (Subject Area)	name	CFU	No. of hours		Prerequisites	Educational Objectives
				lessons	other activities		
1	C.I.	**APPLIED ANIMAL PRODUCTION**					The course aims to enhance understanding of the impact of corporate-level strategies on improving the sustainability of livestock farming and product quality. This will be achieved by integrating an overall view of various production systems with the use of objective measurement and evaluation tools.
	AGR/19	Evaluation tools for quality management in livestock	6	21	42	-	The course aims to provide knowledge useful for assessing the effects of sustainable livestock production systems on the quality of animal-derived foods. Topics related to the objective evaluation and determination of the main parameters defining the quality of animal-derived foods and the possible factors causing variations will be addressed. Additionally, criteria for obtaining, evaluating, and presenting relevant objective data will be discussed. By the end of the course, students will be able to evaluate the impact of sustainable livestock systems on the quality of animal-derived products by identifying the parameters of quality most influenced. Furthermore, students will be capable of objectively measuring some of these parameters and critically interpreting and presenting relevant data.
	AGR/19	Sustainable management of animal production system	6	21	42	-	The aim of the course is to deepen students' understanding of animal husbandry techniques aimed at ensuring the sustainability and quality of production. By the end of the course, students will be able to develop sustainable grazing management for ruminant species by selecting appropriate stocking rates based on adopted grazing techniques, as well as outdoor pig farming. Additionally, they will be able to assess the use of by-products from the agri-food industry in animal feed or other alternative food resources through analytical characterization and determine their effects on product quality. Students will also be able to critically evaluate organic animal production systems and their effects on animal product quality compared to "conventional" production techniques. Furthermore, they will be able to critically assess husbandry factors that can have a significant impact on the environment in terms of greenhouse gas emissions and develop possible husbandry strategies to mitigate this impact.

2	AGR/03	Fruitculture	6	21	42	-	The course aims to provide knowledge on the cultivation of the main fruit tree species, especially those found in the Mediterranean environment. It delves into aspects related to crop framing, variety and rootstock selection, agronomic management of orchards, and cultivation techniques aimed at sustainable and quality production. By the end of the course, students will be able to address key agronomic decisions related to fruit tree cultivation in the Mediterranean environment and design environmentally and economically sustainable fruit orchards.
3	C.I.	**ARTHROPOD PEST MANAGEMENT IN MEDITERRANEAN CROPS**					The course aims to increase the knowledge on the ecological and phytosanitary importance of key arthropod plant pests and on their integrated and biocontrol strategies.
	AGR/11	Biological control	6	21	42	-	Aim of the course is to provide general knowledge on multitrophic interactions among plants, arthropod pests and theirbiocontrol agents in natural and agricultural ecosystems. Moreover, specific information on biology and rearing methods of natural enemies as wellas on biocontrol field strategies are provided. Students will be able to recognize and exploit the main control agents of arthropod pests in Mediterranean crops; also, they will acquire theoretical and practical skills on field application of biological pest control strategies in Mediterranean crops.
	AGR/11	Integrated pest management	6	21	42	-	The course aims at providing advanced knowledge on the ecological role and harmfulness of key insect pests of the major Mediterranean crops. The main sustainable integrated management strategies specific for each key insect pest of the Mediterranean environment are alsoprovided. Students will thus be able to recognize thekey insect pest and their damage, as well as to develop specific integrated and sustainable control strategies against them.
4	AGR/03	Mediterranean fruit tree crops	6	21	42	-	The course aims to provide students with in-depth knowledge of the interrelationships among biological, environmental, and technical-cultural factors involved in citrus, grape, and olive production. Specifically, students will be expected to address and resolve all issues related to variety selection and cultivation techniques, adopting the most appropriate ones according to specific needs. By the end of the course, students will be able to make autonomous agronomic decisions and assist stakeholders in the citrus, olive, and grape production sectors in making suitable pre-planting and management choices for sustainable and high-quality productions in the Mediterranean environment.

5	AGR/04	Vegetable and flower crop	6	21	42	-	The course aims to provide a comprehensive understanding of the cultivation of the most representative species in Italian horticulture and floriculture. Its objective is to offer suitable preparation for organizing and managing the production process to achieve appropriate yields, product quality, and environmental sustainability. By the end of the course, students will be able to organize the production process of both vegetable and floral crops, taking into consideration their qualitative aspects and the sustainability of the production process itself.
6	AGR/12	Diagnosis in plant pathology	6	21	42	-	The course aims to provide knowledge on traditional and innovative methods for the diagnosis and characterization of the main plant disease agents. Students will learn various phytopathological diagnostic techniques (isolation, biological assay, serological and molecular methods for diagnosis, characterization, and identification of plant pathogens) as well as their use in diagnostic protocols required by regulations and legislation concerning quarantine pathogens and quality. Students will develop skills in selecting the most suitable diagnostic method for the rapid and accurate interception of pathogens in order to better guide prevention and control methods.
7	C.I.	**REAL ESTATE VALUATION AND COMMON AGRICULTURAL POLICIES**					The integrated course aims to provide principles, models, and methodological and applicative tools for determining the value of goods with and without a market, as well as to present common agricultural and fisheries policies, considering their objectives, tools, and operational methods
	AGR/01	Rural estate	6	21	42	-	Through applications related to various notable cases, operational schemes are provided for estimating the value of rural properties even in the presence of legal limitations on property rights, methods of investigation and analysis of the real estate market, guidelines for drafting real estate due diligence, and tools for professional practice in credit concessions, damage assessment, green areas, and ornamental plants. The aim is to impart the necessary skills for developing an objective appraisal judgment, in accordance with international appraisal standards, articulated, transparent, and corresponding to the practical reasoning of the appraisal and justice requirements.
	AGR/01	European Agricultural and Fisheries Policy	6	21	42	-	The course aims to present the European policies on agriculture and fisheries, considering their objectives, instruments, and functioning. It seeks to develop an understanding of their evolution and current reform, with reference to market regulation and the development of coastal and rural areas. The course also enables the development of key tools for financing agri-food businesses through specific exercises. By the end of the course, students will be able to engage in business consulting activities and project design using European funds.

8	AGR/12	Plant disease management	6	21	42	-	The course aims to provide an in-depth understanding of crop protection in horticulture, floriculture, and fruit growing. It aims to train professionals capable of identifying and recommending the most suitable defense strategies to contain major disease agents. Additionally, the course will provide criteria for continuous professional updating in crop protection. By the end of the course, students will be able to consult specialized literature, use websites relevant to plant pathology, and develop effective eco-sustainable strategies against major plant disease agents.
9	C.I.	**STRATEGIC MANAGEMENT OF AGRICULTURAL FIRMS, MARKETS AND MARKETING**					Essential tools are provided for defining the strategic and competitive orientation of the enterprise, as well as for analyzing and interpreting the structure and management of the agricultural enterprise. Additionally, fundamental instruments are offered for understanding the market of agri-food products and its trends
	AGR/01	Strategic management of the farm	6	21	42	-	Essential tools are provided for defining the strategic and competitive orientation of the enterprise and for analyzing and interpreting the structure and management of the agricultural enterprise, methods for planning entrepreneurial choices, and investment programming in agriculture, both short and long term. At the end of the course, students will be able to develop prospective and actual economic balances, as well as a business plan for accessing venture capital.
	AGR/01	Agri-Food markets and marketing	6	21	42	-	The course aims to provide students with the basic tools necessary to understand the market for agri-food products and its trends within developed economic systems, as well as to provide the methodological foundations and skills needed to analyze development strategies and marketing models in the competitive market. By the end of the course, students will be able to develop a marketing plan for accessing investment measures in rural development plans.
10	C.I.	**SUSTAINABLE AGROECOSYSTEM**					Provide knowledge about the composition of soil organic matter, techniques to enhance it, and its functions, with a focus on rational soil management for conservation, fertility preservation, and improved yields through the management of agricultural production factors and technical means.
	AGR/13	Management of soil organic matter	6	21	42	-	The module aims to provide in-depth knowledge of natural organic matter dynamics and nutrients to understand the factors regulating plant growth, particularly in light of new scenarios arising from climate change. By the end of the course, students will have a comprehensive understanding of organic matter and nutrient dynamics in agricultural soils, as well as the relationships between soil nutritional properties and vegetation. Additionally, students will gain insights into the potential use of treated or untreated organic waste matrices to enhance soil organic content.

	AGR/02	Sustainable management of cropping systems	6	21	42	-	Provide knowledge for the rational management of soil conservation, fertility maintenance, and improvement of crop yields, and acquire understanding for managing agricultural production factors and technical means regarding public health, plant health, animal welfare, and preservation of non-renewable resources to meet societal and market needs. By the end of the course, students will be able to develop and agronomically manage herbaceous cropping systems through sustainable farming techniques, focusing on soil organic matter management, fertilization plans, irrigation techniques, weed control, alternative fertilizer sources, and the use of biomass crops for bioenergy production. They will also be capable of applying simulation models for predicting crop development and yields.
11	AGR/08	Water resource management in agriculture	6	21	42	-	Provide knowledge on soil hydrology in agricultural land and irrigation techniques, as well as on the criteria for designing and sizing irrigation systems. Students should acquire knowledge about the design, maintenance, and operation of irrigation systems, with particular reference to surface and subsurface microirrigation systems. Additionally, students will gain insights into the use of unconventional water resources in agriculture. Furthermore, students will develop specific skills in water-saving methods and techniques in agriculture, particularly focusing on deficit irrigation.
12	AGR/12	Biological control of plant diseases	6	21	42	-	The course aims to provide knowledge on biological defense of agricultural productions in pre- and post-harvest, essential for defining appropriate biological control programs. Special attention is given to the selection of antagonists, their modes of action, and their potential applications in major Mediterranean horticultural crops for the containment of significant pre- and post-harvest pathogens. By the end of the course, students will be able to plan and propose suitable biological control strategies for different horticultural contexts, both pre- and post-harvest.
13	AGR/09	Agricultural mechanisation and labour organisation	7	21	56	-	The objective of the course is to provide students with the necessary elements to properly plan and evaluate the organization of work carried out by machinery construction sites, as well as to proceed with the mechanization of agricultural enterprises, entire areas, or innovative crops for the territory by designing the corresponding machinery fleet in relation to business objectives, agronomic constraints, and economic context. Therefore, environmental, technological, economic, and human factors that contribute to achieving the objectives are taken into consideration and organized in relation to each other, while respecting natural and environmental resources and according to ergonomic and safety criteria for operators. Elements of group work organization and personal motivations are also included.

14	AGR/17	Animal breeding	6	21	42	-	The course aims to provide students with knowledge of genetic improvement in animal species for livestock production. Key concepts regarding the principles and techniques of selection in animal husbandry, the principles underlying biological diversity, and the reasons for applying molecular biology techniques will be presented to the students. By the end of the course, students will be able to apply some basic laboratory molecular biology techniques and grasp fundamental notions for computer-based management of genetic/genomic data. They will understand the issues/potential associated with managing livestock farms and evaluate the possibility of corrective interventions to enhance efficiency, also utilizing genomic tools. Lastly, students will possess the cultural elements and scientific language specific to genetics, genomics, and genetic improvement as applied to animal husbandry.
15	AGR/18	Animal nutrition and feeding	6	21	42	-	Provide skills for formulating rations based on the nutritional value of livestock feed and the nutritional requirements of animals. By the end of the course, students will be able to formulate rations for both monogastric and polygastric livestock.
16	AGR/10	Rural buildings design	6	21	42	-	Provide technical skills for the performance of professional activities related to design, management, measurements, accounting, static and fire certification, safety coordination, and testing of works related to rural constructions, both for new constructions and for renovation interventions on existing buildings.
17	AGR/04	Protected cultivation	6	21	42	-	The course is aimed at training specialists capable to analyse problems and evaluate possible options to get production from crops produced under modified micro- climatic conditions. These specialists will be able to put into practice the skills acquired with the purpose of planning and managing out-of-season production processes through the use of appropriate protection and suitable production techniques. At the end of the course the student will be able to design and manage crops in a protected environment.
18	C.I.	**HERBACEOUS CROP SYSTEMS**					The aim is to acquire adequate knowledge of quality evaluation systems for crops of primary food interest and to study the principles of cultivation of annual and perennial herbaceous plants for livestock feeding, as well as species with potential interest for energy production.
	AGR/02	Biomass crops for energy	6	21	42	-	Provide knowledge for the rational management of biomass crops for energy within agro-energy chains for the production of thermal-electric energy, biogas, bioethanol, and biodiesel. The course will also provide insights into topics necessary for the development of an agro-energy chain: Legislation, Biomass Sourcing, Logistics, Transformation Processes, Transformation Plant, End Use, Sustainability (Energy, Environmental, Economic, Social). At the end of the course, students will have acquired the necessary skills in agronomic techniques for the main dedicated biomass crops in the Mediterranean environment, and on the main bioconversion processes for the production of renewable energy and non-energy

							products from a circular economy perspective.
	AGR/02	Weed management techniques and fertilisation	6	21	42	-	Provide in-depth knowledge on the role, functions, and uptake of nutrients in cultivated plants, as well as on the biology, ecology, role, and impact of weeds in agroecosystems. Develop skills in formulating fertilization plans and techniques, as well as in managing weed control methods, both physical, chemical, and integrated, in major Mediterranean crops.
19	AGR/11	Sustainable pest control	6	21	42	-	The objective of the course is to offer a comprehensive understanding of multitrophic interactions among plants, arthropod pests, and their biocontrol agents in both natural and agricultural ecosystems. Additionally, the course provides detailed insights into the biology and rearing methods of natural enemies, as well as various biocontrol field strategies. Upon completion, students will be capable of identifying and utilizing the primary control agents of arthropod pests in Mediterranean crops. Furthermore, they will gain theoretical knowledge and practical expertise in implementing biological pest control strategies in Mediterranean crop fields.
20	AGR/09	Technologies for innovation and safety in agriculture	6	21	42	-	Provide the basic knowledge necessary for proper management and supervision of work processes, also from an energy perspective. Give adequate emphasis to aspects related to personnel safety in the workplace. At the end of the course, the student will be able to assess some basic processes (such as renewable energy production systems, characteristics of electricity for its use in the agro-industrial sector, selection and sizing of pumps for agricultural use), prioritizing the technical-engineering approach. Furthermore, they will be able to identify the main sources of risk associated with work activities (exposure to noise, exposure to vibrations, risks related to the use of spraying machines) and evaluate them in accordance with current regulations.

AGRICULTURAL SCIENCE AND TECHNOLOGY

6. OFFICIAL STUDY PLAN

Coort 2024-2025

6.1 CURRICULUM "Plant productions"

n.	SSD	Name	CFU	Teaching Method	Preparation Assessment	frequency
1° year - 1° period						
1	*AGR/04*	*Vegetable and flower crop*	*6*	*F+E*	*PI / O*	*no*
2	*AGR/12*	*Plant disease management*	*6*	*F+E*	*O*	*no*
3	*C.I.*	*SUSTAINABLE AGROECOSYSTEM*				
	AGR/13	*Management of soil organic matter*	*6*	*F+E*	*PI / O*	*no*
	AGR/02	*Sustainable management of cropping systems*	*6*	*F+E*	*O*	*no*
4	*AGR/08*	*Water resource management in agriculture*	*6*	*F+E*	*O+S*	*no*
1° year - 2° period						
5	*AGR/03*	*Fruitculture*	*6*	*F+E*	*O*	*no*
6	*C.I.*	*REAL ESTATE VALUATION AND COMMON AGRICULTURAL POLICIES*				
	AGR/01	*Rural estate*	*6*	*F+E*	*O + T*	*no*
	AGR/01	*European Agricultural and Fisheries Policy*	*6*	*F+E*	*O+S*	*no*
7	*AGR/09*	*Agricultural mechanisation and labour organisation*	*7*	*F+E*	*O+S*	*no*
8	*AGR/11*	*Sustainable pest control*	*6*	*F+E*	*PI / O*	*no*
2° year - 1° period						

9	*AGR/03*	*Mediterranean fruit tree crops*	*6*	*F+E*	*O*	*no*
10	*AGR/04*	*Protected cultivation*	*6*	*F+E*	*O*	*no*
11	*C.I.*	*HERBACEOUS CROP SYSTEMS*				
	AGR/02	*Biomass crops for energy*	*6*	*F+E*	*O + T*	*no*
	AGR/02	*Weed management techniques and fertilisation*	*6*	*F+E*	*O*	*no*
12		*Optional subject*	*12*			
2° year - 2° period						
Further activities						
Other knowledge useful for job placement			*1*			

Final examination, by one of the following modalities:	*22*			
a) Final examination				
Data acquisition totally carried out in Italy	*18*			
Thesis writing	*4*			
b) Final examination				
Data acquisition partially carried out abroad *Data acquisition partially carried out in Italy*	*9* *9*			
Thesis writing	*4*			
c) Final examination				
Data acquisition totally carried out abroad	*18*			
Thesis writing	*4*			

6. OFFICIAL STUDY PLAN
Coort 2024-2025

6.2 CURRICULUM "Plant protection technologies"

n.	SSD	Name	CFU	Teaching Method	Preparation Assessment	frequency
1° year - 1° period						
1	*AGR/04*	*Vegetable and flower crop*	*6*	*F+E*	*PI / O*	*no*
2	*AGR/12*	*Plant disease management*	*6*	*F+E*	*O*	*no*
3	*C.I.*	*SUSTAINABLE AGROECOSYSTEM*				
	AGR/13	*Management of soil organic matter*	*6*	*F+E*	*PI / O*	*no*
	AGR/02	*Sustainable management of cropping systems*	*6*	*F+E*	*O*	*no*
4	*AGR/08*	*Water resource management in agriculture*	*6*	*F+E*	*O+S*	*no*
1° year - 2° period						
5	*AGR/03*	*Fruitculture*	*6*	*F+E*	*O*	*no*
6	*C.I.*	*REAL ESTATE VALUATION AND COMMON AGRICULTURAL POLICIES*				
	AGR/01	*Rural estate*	*6*	*F+E*	*O + T*	*no*
	AGR/01	*European Agricultural and Fisheries Policy*	*6*	*F+E*	*O+S*	*no*
7	*AGR/09*	*Agricultural mechanisation and labour organisation*	*7*	*F+E*	*O+S*	*no*
8	*AGR/11*	*Sustainable pest control*	*6*	*F+E*	*PI / O*	*no*
2° year - 1° period						
9	*C.I.*	*ARTHROPOD PEST MANAGEMENT IN MEDITERRANEAN CROPS*				
	AGR/11	*Biological control*	*6*	*F+E*	*PI / O*	*no*
	AGR/11	*Integrated pest management*	*6*	*F+E*	*PI / O*	*no*
10	*AGR/12*	*Biological control of plant diseases*	*6*	*F+E*	*O*	*no*
11	*AGR/12*	*Diagnosis in plant pathology*	*6*	*F+E*	*O*	*no*
12		*Optional subject*	*12*			
2° year - 2° period						
Further activities						

Other knowledge useful for job placement	*1*			

Final examination, by one of the following modalities:	*22*			
a) Final examination				
Data acquisition totally carried out in Italy	*18*			
Thesis writing	*4*			
b) Final examination				
Data acquisition partially carried out abroad *Data acquisition partially carried out in Italy*	*9* *9*			
Thesis writing	*4*			
c) Final examination				
Data acquisition totally carried out abroad	*18*			
Thesis writing	*4*			

6. OFFICIAL STUDY PLAN
Coort 2024-2025

6.3 CURRICULUM "Economy and planning"

n.	SSD	Name	C F	Teaching Method	Preparation	freque
1° year - 1° period						
1	*AGR/04*	*Vegetable and flower crop*	*6*	*F+E*	*PI / O*	*no*
2	*AGR/12*	*Plant disease management*	*6*	*F+E*	*O*	*no*
3	*C.I.*	*SUSTAINABLE AGROECOSYSTEM*				
	AGR/13	*Management of soil organic matter*	*6*	*F+E*	*PI / O*	*no*
	AGR/02	*Sustainable management of cropping systems*	*6*	*F+E*	*O*	*no*
4	*AGR/08*	*Water resource management in agriculture*	*6*	*F+E*	*O+S*	*no*
1° year - 2° period						
5	*AGR/03*	*Fruitculture*	*6*	*F+E*	*O*	*no*
6	*C.I.*	*REAL ESTATE VALUATION AND COMMON AGRICULTURAL POLICIES*				
	AGR/01	*Rural estate*	*6*	*F+E*	*O + T*	*no*
	AGR/01	*European Agricultural and Fisheries Policy*	*6*	*F+E*	*O+S*	*no*
7	*AGR/09*	*Agricultural mechanisation and labour organisation*	*7*	*F+E*	*O+S*	*no*
8	*AGR/11*	*Sustainable pest control*	*6*	*F+E*	*PI / O*	*no*
2° year - 1° period						
9	*C.I.*	*STRATEGIC MANAGEMENT OF AGRICULTURAL FIRMS, MARKETS AND MARKETING*				
	AGR/01	*Strategic management of the farm*	*6*	*F+E*	*O*	*no*
	AGR/01	*Agri-Food markets and marketing*	*6*	*F+E*	*O + S*	*no*
10	*AGR/10*	*Rural buildings design*	*6*	*F+E*	*PI / O*	*No*
11	*AGR/09*	*Technologies for innovation and safety in agriculture*	*6*	*F+E*	*PI / O*	*no*
12		*Optional subject*	*12*			
2° year - 2° period						
Further activities						

Other knowledge useful for job placement	*1*			

Final examination, by one of the following modalities:	*22*			
a) Final examination				
Data acquisition totally carried out in Italy	*18*			
Thesis writing	*4*			
b) Final examination				
Data acquisition partially carried out abroad *Data acquisition partially carried out in Italy*	*9* *9*			
Thesis writing	*4*			
c) Final examination				
Data acquisition totally carried out abroad	*18*			
Thesis writing	*4*			

6. OFFICIAL STUDY PLAN
Coort 2024-2025

6.4 CURRICULUM "Zootechnical"

n.	SSD	Name	C F	Teaching Method	Preparation	frequen
1° year - 1° period						
1	*AGR/04*	*Vegetable and flower crop*	*6*	*F+E*	*PI / O*	*no*
2	*AGR/12*	*Plant disease management*	*6*	*F+E*	*O*	*no*
3	*C.I.*	*SUSTAINABLE AGROECOSYSTEM*				
	AGR/13	*Management of soil organic matter*	*6*	*F+E*	*PI / O*	*no*
	AGR/02	*Sustainable management of cropping systems*	*6*	*F+E*	*O*	*no*
4	*AGR/08*	*Water resource management in agriculture*	*6*	*F+E*	*O+S*	*no*
1° year - 2° period						
5	*AGR/03*	*Fruitculture*	*6*	*F+E*	*O*	*no*
6	*C.I.*	*REAL ESTATE VALUATION AND COMMON AGRICULTURAL POLICIES*				
	AGR/01	*Rural estate*	*6*	*F+E*	*O + T*	*no*
	AGR/01	*European Agricultural and Fisheries Policy*	*6*	*F+E*	*O+S*	*no*
7	*AGR/09*	*Agricultural mechanisation and labour organisation*	*7*	*F+E*	*O+S*	*no*
8	*AGR/11*	*Sustainable pest control*	*6*	*F+E*	*PI / O*	*no*
2° year - 1° period						
9	*C.I.*	*APPLIED ANIMAL PRODUCTION*				
	AGR/19	*Sustainable management of animal production system*	*6*	*F+E*	*O*	*no*
	AGR/19	*Evaluation tools for quality management in livestock*	*6*	*F+E*	*O*	*no*
10	*AGR/17*	*Animal breeding*	*6*	*F+E*	*O*	*No*
11	*AGR/18*	*Animal nutrition and feeding*	*6*	*F+E*	*O*	*no*
12		*Optional subject*	*12*			
2° year - 2° period						
Further activities						
Other knowledge useful for job placement			*1*			

Final examination, by one of the following modalities:	*22*			

a) Final examination				
Data acquisition totally carried out in Italy	*18*			
Thesis writing	*4*			
b) Final examination				
Data acquisition partially carried out abroad *Data acquisition partially carried out in Italy*	*9* *9*			
Thesis writing	*4*			
c) Final examination				
Data acquisition totally carried out abroad	*18*			
Thesis writing	*4*			