

COURSE OF STUDY Agricultural Science and Technology - Curriculum Plant production and protection of crops

ACADEMIC YEAR Second year

ACADEMIC SUBJECT Vegetable and ornamental crops

General information	
Year of the course	II
Academic calendar (starting and ending date)	II semester (04/03/24 – 14/06/24)
Credits (CFU/ETCS):	6
SSD	Vegetable and ornamental crops AGR/04
Language	Italian
Mode of attendance	Optional, strongly recommended

Professor/ Lecturer	
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Department and address	Dipartimento di Scienze del Suolo, della Pianta e degli Alimenti (DISSPA) Department of Soil, Plant and Food Sciences Via Amendola 165/a Last new building, second floor, room n. 34
Virtual room	teams code for tutoring activities: 0omd379
Office Hours (and modalities: e.g., by appointment, on line, etc.)	Flexible, on line too. It is preferable to arrange an appointment by mail or by telephone

Work schedule			
Hours			
Total	Lectures	Hands-on (laboratory, workshops, working groups, seminars, field trips)	Out-of-class study hours/ Self-study hours
150	32	28	90
CFU/ETCS			
6	4	2	

Learning Objectives	The course aims to provide knowledge concerning the basic elements for the design and management of horticultural crops in the Mediterranean environment to improve production and quality even in post-harvest
Course prerequisites	Preliminary knowledge of general mathematics, organic and inorganic chemistry, plant biology, plant genetics, general agronomy is required, although there are no preparatory courses.

Teaching strategie	Frontal teaching and practical activity in the form of exercises, seminars, case analyses, use of telematic supports for the following topics: 1) bulbous plants, 2) substrates for horticultural and nursery gardens, 3) horticultural and floricultural biodiversity ; 4) the cultivation of ornamental species in pots; 5) the greenhouses, 6) the quality of the plants to be transplanted. Educational visit to companies producing ornamental plants and vegetables in the provinces of Bari and Brindisi. The teaching course is not delivered in e-learning mode (subject to changes
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	during construction).
Expected learning outcomes in terms of	
Knowledge and understanding on:	<ul style="list-style-type: none"> ○ theoretical and practical aspects of Horticulture and Floriculture. ○ characteristics and botanical classification of vegetables and flowers; ○ pedoclimatic needs for vegetables and flowers; ○ cultivation technique aimed at the sustainable production of quality vegetables and flowers according to national and EU marketing standards. ○ main agri-environmental aspects with influence on process and product quality and on production sustainability.
Applying knowledge and understanding on:	<ul style="list-style-type: none"> ○ Recognize the main vegetables, including local ones, flowers, and ornamental plants. ○ Formulate a propagation plan for horticultural crops. ○ Formulate a cultivation plan for horticultural crops. ○ Manage the post-harvest of flowers and vegetables with sustainable techniques
Soft skills	<ul style="list-style-type: none"> ● <i>Making informed judgments and choices</i> At the end of the course the student should be able to: - conduct a germination test in a controlled room; - monitor the growth of a transplant seedling, ● prepare a written report on the following topics: open field and greenhouse production, even without soil, post-harvest, and product quality. ● <i>Communicating knowledge and understanding</i> At the end of the course the student must be able to create a ppt on the propagation/cultivation of a horticultural crop. ● <i>Capacities to continue learning</i> <ul style="list-style-type: none"> ○ Ability to present and argue on issues relating to nursery and sustainable production of quality vegetables and ornamental plants ○ Communication and relationship skills within a multidisciplinary work group and judgment skills on a technical level. ○ Ability to learn independently <p>At the end of the course, the student must be able to learn the different and sustainable techniques of horticultural production and the quality parameters of vegetables, flowers and ornamental plants.</p>
Syllabus	
Content knowledge	<p>General Part:</p> <ol style="list-style-type: none"> 1. Introduction to the course - Definition of vegetable and ornamental crops classification (morpho-physiological and aesthetic traits, edible portions, nutritional characteristics, etc.). 2. Importance of horticultural and floricultural sector. 3. Open field horticulture and Climate of protected environment. 4. Propagation and planting (sowing, transplanting, plant density, nursery technique). Irrigation and fertilization techniques. 5. Production scheduling in Floriculture. 6. Herbaceous grafting, solarization, soilless crops. 7. Quality (nitrates content), Plant growth regulators and biostimulants 8. Ripening, harvesting and post-harvesting. <p>Special part:</p> <p>Ornamentals: bulbous species: Gladiolus, Lily, Tulip; cut flowers: rose and mum; cut foliage's: Asparagus, Aralia; pot plants: Spathyphillum, Ficus, Poinsettia, Dieffenbachia, Cyclamen; bedding plants.</p> <p>Main vegetable botanical families: Apiaceae, Asteraceae, Brassicaceae, Chenopodiaceae, Cucurbitaceae, Solanaceae.</p> <p>Perspectives for modern horticulture</p>

Texts and readings	<p>Orticultura – Principi e pratica (a cura di Pardossi, Gianquinto, Santamaria, Incrocci). Edagricole, 2018.</p> <p>Floricultura – Principi e pratica (a cura di Ferrante, Scariot, Romano e De Pascale). Edagricole, 2022.</p> <p>https://www.istat.it/</p>
Notes, additional materials	<p>To LLP-Erasmus Students:</p> <p>FAO - Good Agricultural Practices for greenhouse vegetable crops. Principles for Mediterranean climate areas.</p> <p>Larson R.A., Introduction to Floriculture. Academic Press, New York, London, 1990.</p> <p>Notes of the lectures distributed during the course.</p>
Repository	<i>Teams classroom: Oomd379</i>

Assessment	
Assessment methods	<p><i>The evaluation of the student's preparation takes place on the basis of pre-established criteria, as detailed in Annex A of the Academic Regulations of the Degree Course. Intermediate evaluation written test. Final written test. The attribution of the final grade will take into account the theoretical and practical knowledge acquired, the ability to apply the aforementioned knowledge, independent judgement, communication skills and the ability to integrate the acquired knowledge into a work project.</i></p> <p><i>For foreign students, the mid-term evaluation and exams can be held in English.</i></p>
Assessment criteria	<ul style="list-style-type: none"> • <i>Knowledge and understanding</i> Focus on topics covered in the course • <i>Applying knowledge and understanding</i> Integrate knowledge of different topics for sustainable crop management • <i>Autonomy of judgment</i> Formulate a judgment in relation to the different hypothetical scenarios • <i>Communication skills</i> Communicate the acquired knowledge adequately and with technical language <p><i>Capacities to continue learning</i></p> <ul style="list-style-type: none"> ○ Evaluate the scientific literature and apply it to real situations
Final exam and grading criteria	<p>An intermediary written exam ("exemption") will be carried out.</p> <p>Only the students enrolled in the academic year during which this module is offered, can have an intermediary exam during the teaching period of module. The result of this intermediary exam remains valid for the whole academic year and concurs to the final evaluation of the student.</p> <p>The intermediary exam will be given on the subjects treated during the lessons. The evaluation of the intermediary exam is expressed in thirtieths. The final verification exam is carried out by a written test with a mark out of thirty. The exam is passed when the grade is greater than or equal to 18/30.</p>
Further information	
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