

COURSE OF STUDY **SUSTAINABLE AGRICULTURE**

ACADEMIC YEAR **2023-2024**

ACADEMIC SUBJECT **ELEMENTS OF BOTANY – Module (Integrated course Biosystems)**

General information	
Year of the course	First year
Academic calendar (starting and ending date)	I SEMESTER (9 October 2023 - 26 June 2024)
Credits (CFU/ETCS):	2 ECTS
SSD	BIO/03 – ELEMENTS OF BOTANY
Language	ITALIAN
Mode of attendance	Recommended Attendance

Professor/ Lecturer	
Name and Surname	MARIA LETIZIA GARGANO
E-mail	marialetizia.gargano@uniba.it
Telephone	+39 080 544 3005
Department and address	Department of Soil, Plant and Food Science, Via G. Amendola 165/A 70126 - Bari (Italy), Last building, ground floor, room no. 11
Virtual room	Microsoft Teams Code: w57re8n
Office Hours (and modalities: e.g., by appointment, on line, etc.)	Use email messages to establish appointments

Work schedule			
Hours			
Total	Lectures	Hands-on (laboratory, workshops, working groups, seminars, field trips)	Out-of-class study hours/ Self-study hours
50	16		34
CFU/ETCS			
2	2		

Learning Objectives	Teaching provides basic notions and concepts of plant biology that are indispensable and preparatory to the study of multiple disciplines in the degree program.
Course prerequisites	Being a first-year, first-semester exam, there are no specific prerequisites different from those required for admission to the degree program.

Teaching strategies	Blended learning: The topics of the course will be treated with the help of Power Point presentations, with the support of movies.
----------------------------	--

Expected learning outcomes in terms of	
Knowledge and understanding on:	<ul style="list-style-type: none"> ○ Knowledge of basic information on the morphological, functional, and physiological organization of plant species of agricultural and food interest.
Applying knowledge and understanding on:	<ul style="list-style-type: none"> ○ Ability to determine the main morpho-functional characters of species of agricultural and food interest.

Soft skills	<ul style="list-style-type: none"> • <i>Making informed judgments and choices</i> <ul style="list-style-type: none"> ○ Acquisition of thoughtful autonomy in processing data and knowledge in order to give a correct interpretation of it. • <i>Communicating knowledge and understanding</i> <ul style="list-style-type: none"> ○ Ability to communicate acquired knowledge and skills with appropriate scientific language, including using modern communicative systems, Italian and a European Union language other than one's own, usually English. • <i>Capacities to continue learning</i> <ul style="list-style-type: none"> ○ Ability to use methodological tools and knowledge to successfully approach the profession of a Graduate Technician for Sustainable Agriculture.
Syllabus	
Content knowledge	<u>Elements of Botany (16 hours= 2 ECTS)</u> : The cell: structure and function of cell wall, plastids, vacuole and nucleus. Plant tissues. The organs of the plant: the root, stem, leaf. The flower, the inflorescences. The fruit: morphology and classification. The seed and germination. Photosynthesis. The nitrogen cycle. Phytohormones
Texts and readings	BARONI E. – Guida Botanica d'Italia. 1969 MACOLINO S., 2020 – Botanica Agraria. Cleup PASQUA G., ABBATE G., FORNI C. (eds.), 2015 – Botanica generale e diversità vegetale. Piccin RINALLO C., 2005 – Botanica delle Piante Alimentari. Piccin
Notes, additional materials	Different editions of the reference texts above can also be used.
Repository	Teaching materials will be available on the Teams class: w57re8n

Assessment	
Assessment methods	For students enrolled in the year in which the course is taught, there is a non-compulsory waiver test. The C.I. Biosystems waiver will be held on the dates published in the diary of the interim assessment tests. The outcome of this test contributes to the evaluation of the final profit exam. For those students who were successful in the waiver test, the subject of the oral test will be only the topics developed during the remaining classroom hours. In this case, the evaluation of the profit exam is expressed as the average of the grade given in the exon and the final oral test. Students, who are not interested in taking the exoneration test, will take the final oral examination on the entire syllabus of the two modules of the integrated course, as stipulated in the Didactic Regulations of the Course of Study.
Assessment criteria	<ul style="list-style-type: none"> • <i>Knowledge and understanding</i> <ul style="list-style-type: none"> ○ proficiency in the student's use of specialized vocabulary and expository skills; ○ knows the relationship between plant morphology and function. • <i>Applying knowledge and understanding</i> <ul style="list-style-type: none"> ○ level of operational autonomy achieved compared to the starting level; ○ o capacity for autonomous and personal reworking of learning. • <i>Autonomy of judgment</i> <ul style="list-style-type: none"> ○ knows how to assess their own potential and limitations and can strive for improvement. • <i>Communicating knowledge and understanding</i> <ul style="list-style-type: none"> ○ ability to communicate effectively, knowledge gained from the study of plant biology, including with the help of modern communicative systems, Italian and a language of the European Union other than their own, usually English.

	<ul style="list-style-type: none"> • <i>Communication skills</i> <ul style="list-style-type: none"> ○ can evaluate the cytological, histological, and anatomical difference of the different organs of tracheophytes. • <i>Capacities to continue learning</i> <ul style="list-style-type: none"> ○ assessment of progress against starting levels
Final exam and grading criteria	<p>The profit examination, which is single, comprehensive and collegial for I.C. Biosystems, consists of an oral test on the topics developed during the lecture hours of both modules. Since the "Elements of Botany" module is integrated with the "Principles of Genetics and Genetic Improvement" module, the final oral examination is passed only if the student has achieved a grade of 18/30 on both modules. The final examination grade, will be expressed as the arithmetic mean of the oral tests of the two modules.</p> <p>For female students who were eligible for the waiver examination, the evaluation of the profit examination shall be expressed as the average of the mark given in the waiver and the mark given in the oral examination.</p> <p>The profit examination of female students of foreign students may be conducted in English.</p>
Further information	
	<p>The exemption test is valid until the close of the last examination session of the that academic year, is not mandatory and failure to pass it does not affect the conduct of the final examination.</p>