

Main course information	
Academic subject	Plant physiology and ecophysiology
Degree course	Science of Nature
Degree class	L32
ECTS credits (CFU)	9
Compulsory attendance	yes
Teaching language	Italian
Accademic Year	2019/2020

Professor/Lecturer	
Name & SURNAME	Franca Tommasi
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Tel.	+390805442166
Tutorial time/day	Tuesday 12-14. or by appointment agreed by e-mail. Place: Botanical building, second floor room 21.

Course details	Pass-fail exam/Exam with mark out of 30	SSD code	Type of class
	Exam with mark out of 30	Bio04	Lecture/workshop

Teaching schedule	Year	Semester
	III	I

Lesson type	CFU/ECTS	Lessons (hours)	CFU/ECTS lab	Lab hours	CFU/ECTS tutorial/workshop	Tutorial/workshop hours	CFU/ECTS field trip	Field trip Hours
	9	72	0	0	0	0	0	0

Time management	Total hours	Teaching hours	Self-study hours
	225	72	153

Academic Calendar	First lesson	Final lesson
	First week of October	Second week of January

Syllabus	
Course entry requirements	Basic knowledge of botany, cytology and chemistry. In particular, basic knowledge of plant morphology, plant cell peculiarities and basic chemical notions.
Expected learning outcomes (according to Dublin Descriptors) (it is recommended that they are congruent with the learning outcomes contained in A4a, A4b, A4c tables of the SUA-CdS)	
<i>Knowledge and understanding</i>	Acquisition of specific knowledge in plant physiology to understand the functions of plant also in relation to environmental conditions.
<i>Applying knowledge and understanding</i>	Ability to apply the knowledge of the basic plant physiology to a global ecosystem also in relation to specific environmental problems.
<i>Making informed judgements and choices</i>	Ability to evaluate and interpret the acquired knowledge in autonomy in order to critically assimilate contents and problems that may be proposed.
<i>Communicating knowledge and understanding</i>	Acquisition of a correct scientific language to expose oral topics and ability to write concisely and clearly considerations concerning the functions of plant organisms also in relation to the responses to environmental parameters.
<i>Capacities to continue learning</i>	The student will be able to understand the interactions form-function-environment and also will be able to update the information acquired.

Syllabus

Course content	<p>Relationships between Plant and water: water and plant cells, water balance of plants. Mineral nutrition. Solute transport. Photosynthesis. Carbon assimilation. Transport in the phloem and distribution of photosynthesis products. Assimilation of mineral nutrients (nitrogen, sulfur, phosphorus, cations). Plant responses to light. Light as an environmental signal. Plant hormones. Transition from the vegetative phase to the reproductive phase. Seed physiology: development, germination.</p>
Course books/Bibliography	Rascio e AA:VV. Elementi di Fisiologia vegetale EdiSes 2017;Taiz, Zeiger Fisiologia Vegetale, Piccin 2015.
Notes	To complete and acquire further information on plant physiology, the teacher can provide, at the request of the student, bibliographic indications and scientific articles on specific topics.
Teaching methods	Frontal lessons with multimedia supports
Assessment methods (indicate at least the type written, oral, other)	The student's assessment includes an oral test with at least three questions. During the course, two self-assessment tests will be carried out with some multiple choice and open answer questions in order to control students' learning.
Evaluation criteria (Explain for each expected learning outcome what a student has to know, or is able to do, and how many levels of achievement there are	<p>The student will have to demonstrate:</p> <ol style="list-style-type: none"> knowledge and understanding of the basic contents ability to explain clearly and concisely topics using an appropriate language connect the topics with logical reasoning. <p>The evaluation of examination test score is given by a vote expressed in thirtieth. In the evaluation of the exam test the following elements will taken into account:</p> <ol style="list-style-type: none"> Specific knowledge Language properties Ability to link topics Possible positive outcome of ongoing checks <p>The satisfaction of the aspects (No. 1,2,3) is a necessary and sufficient condition for passing the examination test and obtaining an appropriate evaluation. The maximum mark will be given to students whose tests fully satisfy all the aspects (1-4) listed above.</p> <p>During the exam, the student must show the acquisition of critical skills and the ability to adequately discuss simple problems already proposed during the course by the teacher.</p> <p>The expected learning outcomes are detailed below.</p> <p>Knowledge and understanding</p> <p>The student will be able to know all the contents of the teaching and in particular: the fundamental functions of the plants, i.e. the plant-water relationships, photosynthesis, mineral nutrition, growth, reproduction and development mechanisms. Knowledge of these topics is essential for passing the examination test..</p> <p>Ability to apply knowledge and understanding</p> <p>The student will be able to use, in the most appropriate way, the concepts learned demonstrating to know how the plant lives, grows and reproduces also in different environmental conditions.</p> <p>Autonomy of judgment</p> <p>The student will be able to create simple but significant connections between the basic topics of plant physiology.</p> <p>Communication skills</p> <p>The student will demonstrate ability to express concepts with a proper and clear language.</p> <p>All these skills guarantee a very positive assessment of the student's preparation and performance.</p>

Further information	
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