

General Information	
Academic subject	Environmental and Applied Botany
Degree course	Land and Environmental Science and Technology
Curriculum	
ECTS credits	9
Compulsory attendance 3	No
Language	Italian

Subject teacher	Name Surname	Mail address	SSD
	Maria Letizia Gargano	marialetizia.gargano@uniba.it	BIO/03

ECTS credits details	Topic		ETCs
Basic teaching activities	Botany		9

Class schedule	
Period	I semester
Year	First year
Type of class	Lectures, 6 ECTS (48 hours) Laboratory and field classroom and workshops, 3 ECTS (42 hours)

Time management	
Hours	225
In-class study hours	90
Out-of-class study hours	135

Academic calendar	
Class begins	
Class ends	

Syllabus	
Prerequisites/requirements	
Expected learning outcomes	<ul style="list-style-type: none"> ✓ <i>Knowledge and understanding</i> <ul style="list-style-type: none"> ○ Knowledge of basic information on biodiversity and the morphological, functional and physiological organization of plant organisms of agro-forestry interest. ○ Knowledge of the main taxonomic categories and their phylogenetic relations; knowledge of the mechanisms through which plant organisms reproduce and interact during development. ✓ <i>Applying knowledge and understanding</i> <ul style="list-style-type: none"> ○ Ability to apply the knowledge acquired from the study of plant biology in relation to morpho-functional organization, recognition under the optical microscope, reproductive mechanisms, botanical characteristics and the importance of agroforestry species. ✓ <i>Making informed judgements and choices</i> <ul style="list-style-type: none"> ○ Ability to understand and process the information acquired from the study of plant biology, evaluating its implications on the agro-forestry system, with particular attention to the eco-compatible and sustainable management of resources. <p><i>Communicating knowledge and understanding</i></p> <ul style="list-style-type: none"> ○ Ability to communicate effectively, orally and differently from one's own, usually English

	<ul style="list-style-type: none"> ✓ <i>Capacities to continue learning</i> <ul style="list-style-type: none"> ○ Acquisition and ability to use the methodological tools and knowledge necessary to successfully undertake the studies foreseen in the Master's Degrees of reference. <p>The results of the expected learning, in term of knowledge and ability, are listed in the Annex A of the Didactic Regulation of the Bachelor Course (expressed by the European descriptors of the study title).</p>
<p>Contents</p>	<p>Elements of General Botany. The plant cell and microscopic characters (use of the light microscope). Functions; growth and differentiation of plant cells; meristems and tissues. Stem, root and leaves: morphology, anatomy and functions in monocotyledons and dicotyledons. Flower, fruit, seed (germination and dissemination). Absorption and transport. Mycorrhizae. Transpiration. Photosynthesis and Nitrogen Cycle. Plants in relation to the environment: hydrophytes, halophytes and xerophytes. Plant hormones.</p> <p>Elements of Systematic Botany. The great divisions of the vegetable kingdom. Mushrooms, Algae and Lichens. Bryophytes and Pteridophytes: general characteristics, evolutionary importance, life cycle, ecology, distribution and applied importance. Spermatophytes: Gymnosperms and Angiosperms, their evolutionary importance and ontogenetic cycle, systematic of the most representative families. Use of the binocular microscope. Herbaria. Techniques of preparation of a herbarium.</p> <p>Principles of geobotany. Biological forms and forms of growth. Geographical distribution of plant species; areas; chorotypes. Flora, vegetation and plant landscape. Vegetation Dynamism. Areas and belts of vegetation. Study of vegetation; sampling and analysis techniques.</p>
<p>Course program</p>	
<p>Bibliography</p>	<ul style="list-style-type: none"> ✓ LONGO C.: <i>Biologia vegetale: Morfologia e fisiologia</i>, 1994.Ed.UTET ✓ GEROLA F.- <i>Biologia vegetale vol. 2 - Sistematica filogenetica</i>. 2006. UTET ✓ STRASBURGER E. - <i>Trattato di botanica vol.2 - Evoluzione sistematica ed ecologia</i>. 2007. Delfino Ed ✓ PASQUA G., ABBATE G., FORNI C., 2008 – <i>Botanica generale e diversità vegetale</i>. Piccin ✓ ARRIGONI O., 1973 – <i>Elementi di Biologia Vegetale</i>. Casa Editrice Ambrosiana ✓ PIGNATTI S., 1994. <i>Ecologia del paesaggio</i>. UTET, Torino ✓ PIGNATTI S. (ed.), 1995. <i>Ecologia vegetale</i>. UTET, Torino
<p>Notes</p>	
<p>Teaching methods</p>	<p>The topics of the course will be treated with the help of Power Point presentations, laboratory exercises and field exercises.</p>

Assessment methods	<p>For students enrolled in the year in which the course is taught, an exemption test is provided. The exemption consists of a written test on the subjects developed up to the date of the exemption. The result of this test contributes to the evaluation of the profit examination. The exemption test shall be passed with a mark of at least 18/30.</p> <p>The final exam consists of an oral test on the topics developed during the hours of theoretical and theoretical-practical lessons in the classroom and in the laboratory as reported in the Didactic Regulations of the Degree Course and in the study plan. The test is passed with a grade of at least 18/30.</p> <p>The evaluation of the student's preparation takes place on the basis of pre-established criteria, as detailed in attachment A of the Didactic Regulations of the Degree Course.</p> <p>For students who have passed the exemption test, the evaluation of the profit exam is expressed as an average between the grade reported on the exemption and the profit exam.</p> <p>The profit exam for foreign students can be taken in English.</p>
Evaluation criteria	<ul style="list-style-type: none"> ✓ <i>Knowledge and comprehension ability</i> <ul style="list-style-type: none"> ○ Knowledge of basic information on plant biodiversity in general and on the morphological and functional organization of plant organisms and in particular of Gymnosperms and Angiosperms. ○ Knowledge of the main taxonomic categories and their phylogenetic relations; the mechanisms through which plant organisms reproduce and interact during development. <i>Knowledge and applied comprehension ability</i> <ul style="list-style-type: none"> ○ Ability to apply the knowledge acquired from the study of plant biology with regard to morpho-functional organization, reproductive mechanisms, botanical characteristics and importance of agroforestry species, as well as phylogenetic relationships and taxonomic location of these species. <i>Autonomy of judgement</i> <ul style="list-style-type: none"> ○ Ability to understand and process the information acquired from the study of plant biology, evaluating its implications on the agro-forestry system, with particular attention to the eco-compatible and sustainable management of resources. ✓ <i>Communication skills</i> <ul style="list-style-type: none"> ○ Ability to communicate effectively, orally and in writing, the knowledge acquired from the study of plant biology, also with the help of modern communication systems, Italian and a language of the European Union other than their own, usually English. ✓ <i>Learning ability</i> <ul style="list-style-type: none"> ○ Acquisition and ability to use the methodological tools and knowledge necessary to successfully tackle the studies foreseen in the Master's Degrees of reference
Visiting hours	by appointment to be agreed by e-mail