

General Information	
Academic subject	Principles of Applied Environmental Botany
Degree course	Primary Education (Master Level)
Curriculum	
ECTS credits	7
Compulsory attendance	No
Language	Italiano

Subject teacher	Name Surname	Mail address	SSD
	Mario De Tullio	mario.detullio@uniba.it	BIO/01

ECTS credits details			
Basic teaching activities	Natural sciences	BIO/03	6+1

Class schedule	
Period	I Semestre Academic Year 2018/2019
Year	III
Type of class	Lectures – Lab activities

Time management	
Hours measured	1 hour =60 minutes
In-class study hours	55
Out-of-class study hours	120

Academic calendar	
Class begins	15 October 2018
Class ends	31 January 2019

Syllabus	
Prerequisite requirements	Basic knowledge in natural sciences
Expected learning outcomes	<p><i>Knowledge and understanding</i> Analytic knowledge in the field of biological disciplines, with cross-discipline skills.</p> <p><i>Applying knowledge and understanding</i> Skills in the elaboration of the knowledge and experiences acquired to set up specific educational projects.</p> <p><i>Making informed judgements and choices</i> Skills in critically re-thinking acquired knowledge to develop professional competences of autonomous judgement according to specific educational needs.</p> <p><i>Communicating knowledge and understanding</i> Students will have to show appreciable communication skills in the elaboration of acquired knowledge.</p> <p><i>Capacities to continue learning</i> Students should have the learning skills required to master further information and knowledge in parallel with the development of the discipline.</p>
Contents	

Course program	<p><i>General subjects</i> Definition of Plants. The “Plant kingdom”. <i>Archplastida</i>. Endosymbiosis. Evolution of vascular plants. Spermatophyta.</p> <p><i>Cell biology</i> 1) Plant cell organization. Main differences between animal and plant cells. 2) Plastids. Chloroplasts, Amyloplasts, Chromoplasts: Shape, size, organization, and functions. Plastid conversion. 3) Cell wall: organization and structure. Functions. Secondary modifications. 4) Vacuole: origin, vacuolar sap, functions 5) Cell division: Mitosis and Meiosis.</p> <p><i>Anatomy</i> 1) Primary meristems and tissues. 2) Vegetative and reproductive organs. Root, stem, leaf, flower, fruit, seed. General organization and functions. 3) Secondary meristems and adult tissues. 4) Secondary growth of stem and roots: annual rings, wood porosity, periderm.</p> <p><i>Vegetative growth</i> 1) Seeds: morphology and anatomy in Monocot and Dicots 2) Germination. Hypogeal and epigeal seeds. Seedling development.</p> <p><i>Plant sexual reproduction</i> 1) The life cycle of Chlorophytes, Bryophytes, Pteridophytes, Gymnosperms, Angiosperms. 2) The flower: morphology and anatomy. 3) Gametophyte and sporophyte. 4) Sporogenesis e gametogenesis. Pollen and embryo sac. Pollination. Fertilization. Seed development. 5) The fruit</p> <p><i>Evolution and plant biodiversity</i> 1) The species concept and classification guidelines. 2) Darwin and the origin of species.</p> <p>Plant ecology 1) Biological forms (the Raunkiaer system) 2) Biomes 3) Major vegetation types</p>
Bibliography	Rost et al., Plant Biology, Thomson Brooks/Cole
Notes	
Teaching methods	Lectures/Slides-videos/Lab activities
Assessment methods	Oral exam
Further information	