

<b>General Information</b>	
Academic subject	Systematic botany (I.C. Plant Biology)
Degree course	Agricultural science and technology
Curriculum	
ECTS credits	3 (2 Lectures + 1 Laboratory classes)
Compulsory attendance	No
Language	Italian

<b>Subject teacher</b>	Name Surname	Mail address	SSD
	Giovanni L. Bruno	giovanniluigi.bruno@uniba.it	BIO/02

<b>ECTS credits details</b>			
Basic teaching activities	3		

<b>Class schedule</b>	
Period	First semester
Year	1
Type of class	Lectures Classroom exercises Excursion to the Botanical Garden of the University of Bari Aldo Moro Greenhouse plant cultivations

<b>Time management</b>	
Hours	75
In-class study hours	30 (16 Lessons + 14 Laboratory / field classes)
Out-of-class study hours	45

<b>Academic calendar</b>	
Class begins	2 <sup>nd</sup> october 2017
Class ends	26 <sup>th</sup> january 2018

<b>Syllabus</b>	
Prerequisites/requirements	Knowledge on Biology required for admission to the bachelor in Agricultural science and technology.
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)	<p><i>Knowledge and understanding</i></p> <ul style="list-style-type: none"> <li>○ Knowledge of information about phylogeny and taxonomy;</li> <li>○ Knowledge of morphological and reproductive features that distinguish algae, Chromista, Fungi, lichens, bryophytes, pteridophytes and spermatophytes;</li> </ul> <p><i>Applying knowledge and understanding</i></p> <ul style="list-style-type: none"> <li>○ Ability to apply knowledge on botanical characteristics, taxonomic position and phylogenetic relationships, to taxa included in the module.</li> </ul> <p><i>Making informed judgements and choices</i></p> <ul style="list-style-type: none"> <li>○ Ability to understand biological evolution, phylogenetic relationships, and taxonomic placement of algae, Chromista, Fungi, lichens, bryophytes, pteridophytes and spermatophytes.</li> </ul>

	<p><i>Communicating knowledge and understanding</i></p> <ul style="list-style-type: none"> <li>○ Ability to describe the main morphological and reproductive features that differentiate algae, Chromista, Fungi, lichens, bryophytes, pteridophytes and spermatophytes;</li> <li>○ Ability to present phylogenetic relationships and taxonomic placement of Magnoliophyta families of agricultural interest;</li> </ul> <p><i>Capacities to continue learning</i></p> <p>The expected results of learning, in terms of knowledge and skills, are listed in the Annex A of the Teaching Regulations of the bachelor (expressed by means of the European Descriptors of the bachelor in Agricultural Science and Technology) and are summarized as:</p> <ul style="list-style-type: none"> <li>○ Ability to recognize the main morphological characters and reproductive differences among algae, Chromista, Fungi, lichens, bryophytes, pteridophytes and spermatophytes;</li> <li>○ Ability to describe the phylogeny and taxonomic placement of some species of agricultural interest.</li> </ul>
Contents	<p>Objectives, methods and principles of systematic Botany. Notice on biological evolution. Species definition. Classification, taxonomy, and nomenclature. Evolution of taxonomic systems. Units and taxonomic ranks. Natural, artificial, phenetic, and cladistic taxonomy. Domains and kingdoms. Morphological and reproductive differences between algae, Chromista, Fungi, lichens, bryophytes, pteridophytes and spermatophytes. Morphology and classification of: root, stem, leaves, flowers, inflorescences and fruits. Taxonomic classification and morphological characters in crop species belonging to the families: Amaryllidaceae, Apiaceae, Asteraceae, Brassicaceae, Cucurbitaceae, Asparagaceae, Fabaceae, Iridaceae, Lamiaceae, Liliaceae, Lythraceae, Oleaceae, Orchideaceae, Poaceae, Rosaceae, Rutaceae, Solanaceae, Vitaceae.</p>
Course program	
Bibliography	<ul style="list-style-type: none"> <li>• Notes on lectures distributed during the course.</li> <li>• Pasqua G., Abbate G., Forni C.: Botanica generale e diversità vegetale, Piccin.</li> <li>• Solomon E.P., Berg L.R., Martin D.W.: Biologia: Evoluzione e Biodiversità (vol. III), Edises.</li> <li>• Tripodi G.: Introduzione alla botanica sistematica. Edises.</li> </ul>
Notes	<p>The texts are available at Central Library of Agraria and at teacher office.</p>
Teaching methods	<p>Topics will be treated through:</p> <ul style="list-style-type: none"> <li>• PowerPoint presentations, plant specimens, exsiccata and models examination.</li> <li>• Observations on fresh material with cyto-histological and stereo-microscope;</li> <li>• Greenhouse cultivations of plant species representatives of some botanical families;</li> <li>• Excursion to the Botanical Garden of the University of Bari with recognition activities.</li> </ul>

<p>Assessment methods</p>	<p>The final exam, unique, total and collegial, for the Plant Biology I.C., consists of a written and an oral test on the topics of both modules ("General Botany" and "Systematic Botany"). The final evaluation is in thirtieths, as defined in the Didactic regulations of the bachelor in Agricultural Science and Technology (article 9) and in the syllabus (Annex A).</p> <p>The evaluation of the student's preparation is based on established criteria, as detailed in Annex A of the Didactic regulations of the bachelor program.</p> <p>Written test for "Systematic Botany" module consists of 15 multiple choice questions: 2 points for each right answer, 0 points for each wrong answer or unanswered question. The students, who answer correctly at least 9 questions, are "eligible". Since "Systematic Botany" is one of the two modules of the Plant Biology I.C., the written test for this integrated course is "passed" if the student has also correctly answered at least 18 questions on 30 of "General Botany" module. Overcoming the written test, students access to the oral examination which consists of questions related to the subjects of the two modules. The final evaluation of the exam is due only after the overcoming of the oral test; it will be expressed as the arithmetic mean of the written and the oral tests of the two modules.</p> <p>For students enrolled in the academic year in which this I.C. is taught, there is an exemption test on subjects of lectures and laboratory/field classes held in the period before the test (about half teaching contents). The exemption test is in written form and consists of 15 multiple choice questions: 2 points for each right answer, 0 points for each wrong answer or unanswered question. The students who answer correctly at least 9 questions are "eligible". Since "Systematic Botany" is one of the two modules of the Plant Biology I.C., the exemption test for the I.C. is "passed" if the student has also correctly answered at least 18 questions on 30 of the "General Botany" module.</p> <p>The positive results of exemption of both modules contribute to the evaluation of the Plant Biology I.C. exam and are valid for one academic year.</p> <p>For students fit to exemption, written and oral tests will point on topics of lectures and laboratory classes held in the subsequent period of the test. In this case, the final evaluation includes exemption test, written test and oral examination.</p> <p>For foreign students the exam can be done in English.</p>
<p>Evaluation criteria</p>	<p><i>Knowledge and understanding</i></p> <ul style="list-style-type: none"> <li>○ Knowledge on biological evolution, taxonomic systems and their ranks;</li> <li>○ Knowledge on morphological and reproductive characteristics of algae, Chromista, Fungi, lichens, bryophytes, pteridophytes and spermatophytes;</li> <li>○ Knowledge on morphological characteristics and taxonomy of Magnoliophyta families of agricultural interest.</li> </ul> <p><i>Applying knowledge and understanding</i></p> <ul style="list-style-type: none"> <li>○ Ability to detect algae, Chromista, Fungi, lichens,</li> </ul>

	<p>bryophytes, pteridophytes and spermatophytes on morphological and reproductive traits;</p> <ul style="list-style-type: none"> <li>○ Ability to characterize the main Magnoliophyta families of agricultural interest;</li> <li>○ Ability to locate the taxonomic placement of the major crop species in most recent classification systems.</li> </ul> <p><i>Making informed judgements and choices</i></p> <ul style="list-style-type: none"> <li>○ Ability to insert organisms in hierarchical ranks of a taxonomic system.</li> <li>○ Ability to identify crop species using morphological characters.</li> </ul> <p><i>Communicating knowledge and understanding</i></p> <ul style="list-style-type: none"> <li>○ Ability to describe the main morphological and reproductive traits differentiating algae, Chromista, Fungi, lichens, bryophytes, pteridophytes and spermatophytes;</li> <li>○ Ability to present phylogenetic relationships and taxonomic placement of Magnoliophyta families of plants of agricultural interest;</li> </ul> <p><i>Capacities to continue learning</i></p> <ul style="list-style-type: none"> <li>○ Learning of this module occurs during lectures and laboratory classes, exemption, written and oral test, and using self-assessment test provided by the teacher or presented in the class. A parameter useful is the time between the teaching frequency of passing the exam.</li> </ul>
Further information	<p>Official visiting hours:  Monday to Thursday morning or afternoon previous agreement by e-mail.</p>