



## Teaching Guide

Identifying Data					2018/19
<b>Subject (*)</b>	Introduction to Botany: General Botany		<b>Code</b>	610G02023	
<b>Study programme</b>	Grao en Bioloxía				
Descriptors					
<b>Cycle</b>	<b>Period</b>	<b>Year</b>	<b>Type</b>	<b>Credits</b>	
Graduate	1st four-month period	First	Obligatory	6	
<b>Language</b>	SpanishGalician				
<b>Teaching method</b>	Face-to-face				
<b>Prerequisites</b>					
<b>Department</b>	Bioloxía				
<b>Coordinador</b>	Fagúndez Díaz, Jaime	<b>E-mail</b>	jaime.fagundez@udc.es		
<b>Lecturers</b>	Cremades Ugarte, Javier Fagúndez Díaz, Jaime Sahuquillo Balbuena, Elvira	<b>E-mail</b>	javier.cremades@udc.es jaime.fagundez@udc.es elvira.sahuquillo@udc.es		
<b>Web</b>					
<b>General description</b>	Introduction to Botany, the science which studies the different organisms traditionally included under the label "plants". It integrates information from a wide variety of disciplines, including physiology, plant anatomy and histology, biochemistry, genetics, ecology, etc. The students will acquire knowledge and skills useful for different professional activities, including research, teaching, environmental consultancy, agronomy, ethnobotany, etc.				

## Study programme competences

Code	Study programme competences
A1	Recoñecer distintos niveis de organización nos sistemas vivos.
A2	Identificar organismos.
A4	Obter, manexar, conservar e observar espécimes.
A7	Reconstruír as relacións filoxenéticas entre unidades operacionais e pór a proba hipóteses evolutivas.
A19	Analizar e interpretar o comportamento dous seres vivos.
A29	Impartir coñecementos de Bioloxía.
A30	Manexar adecuadamente instrumentación científica.
A31	Desenvolverse con seguridade nun laboratorio.
A32	Desenvolverse con seguridade no traballo de campo.
B1	Aprender a aprender.
B6	Organizar e planificar o traballo.
B8	Sintetizar a información.
B12	Adaptarse a novas situacións.

## Learning outcomes

Learning outcomes	Study programme competences		
-Being able to critically manage relevant information from different bibliographic sources.		B1 B8	
- Encourage students to further learn and research about Botany, a basic discipline in Biology.		B6 B12	
- Understanding the different reproductive types and life cycles of the diverse organisms studied in Botany.	A19		
- Acquiring skills related to the observation, description and identification of fungi, algae and plants.	A1 A2 A4		



- Learning basic techniques of field- and laboratory work in Botany.	A30 A31 A32		
- Understanding the evidences of the evolutionary relationships among the different fungi, algae and plants.	A7		
- Understanding the taxonomic organization and nomenclature of fungi, algae and plants.	A1 A2 A7		
- Understanding the morphological and taxonomical diversity of fungi, algae and plants.	A1 A2 A29		

Contents	
Topic	Sub-topic
Teoría: Introduction and general characteristics	1 Plants and related organisms in the tree of life. Evolutionary relationships and phylogeny. Characteristics and main groups. 2 Morphological organization of plants and related organisms. From talophytes to cormophytes. 3 Reproduction. Alternation of nuclear phases and generations. Biological cycles. 4 Systematics, nomenclature and taxonomy of plants and other related groups.
Teoría: Studied groups	5 Flowering plants. General characteristics and life cycle of seed plants. 6 Morphology and floral biology of seed plants. 7 Angiosperms (monocots and dicots) and gymnosperms. 8 The non-flowering plants. General characteristics of embriophytes. Vascular embriophytes. General characteristics and life cycle of pteridophytes. 9 Prevascular embriophytes. General characteristics and life cycle of bryophytes. 10 Cyanobacteria and eukaryotic algae. 11 Fungi and other heterotrophic organisms. Lichens and other symbiotic associations.
Teoría: Introduction to plant conservation and geobotany	12 Conservation of plant diversity. Threats and conservation strategies. 13 Geobotany as integrative science. The floristic kingdoms and major plant formations of the Earth.
Seminars	1 Diagrams and floral formulas. Identification keys (2h). 2 Seminar on vascular and prevascular plants (2h). 3 Life cycles of algae and fungi (2h). 4 Comparative studies of organisms (1h).
Lab sessions	1 Observation of terrestrial plants in their natural environment. Collection and preservation methods. 2 Observation and description of dicotyledonous angiosperms. 3 Observation and Description of monocot angiosperms. 4 Observation and description of gymnosperms. 5 Observation and description of pteridophytes. 6 Observation and description of bryophytes. 7 Observation and description of macroscopic algae. 8 Observation and description of microscopic algae. 9 Observation and description of fungi.



Case studies	1 Collection, identification and conservation of two dicotyledonous angiosperms. 2 Collection, identification and conservation of two monocotyledonous angiosperms. 3 Collection, identification and conservation of two gymnosperms. 4 Collection, identification and conservation of ferns and moss. 5 Collection, identification and conservation of two different macroalgae division. 6 Collection, identification and preservation of higher fungi and lichen.
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Planning				
Methodologies / tests	Competencies	Ordinary class hours	Student?s personal work hours	Total hours
Case study	A2 A4 A22 A32 B1 B6 B8 B12	1	22	23
Laboratory practice	A30 A31	18	9	27
Guest lecture / keynote speech	A1 A7 A19 A29 B1 B6 B8 B12	21	52.5	73.5
Seminar	A1 A7 B1	7	17.5	24.5
Personalized attention		2	0	2

(\*)The information in the planning table is for guidance only and does not take into account the heterogeneity of the students.

Methodologies	
Methodologies	Description
Case study	The student will collect, identify and handle properly preserved, a collection of 12 samples, including 4 angiosperms, 2 gimnosperms, 1 fern, 1 bryophyte, 2 algae from different phyla, 1 fungi and 1 lichen.
Laboratory practice	The student will work with different kinds of living and preserved material, representative of the studied groups of the subject.
Guest lecture / keynote speech	Lecturers will explain the main concepts of the subject. Slides will be uploaded.
Seminar	Lecturers will invite the students to work on specific aspects of the studied groups, and discussion will follow in seminars.

Personalized attention	
Methodologies	Description
Seminar Laboratory practice Case study Guest lecture / keynote speech	Any personal queries will be addressed in personal meetings with the students

Assessment			
Methodologies	Competencies	Description	Qualification
Seminar	A1 A7 B1	Quality of interventions and demonstrated interest in the subject	5
Laboratory practice	A30 A31	A short test at the end of the lab sessions	15
Case study	A2 A4 A22 A32 B1 B6 B8 B12	Quality of the personal collection of organisms will be evaluated	15
Guest lecture / keynote speech	A1 A7 A19 A29 B1 B6 B8 B12	Final exam with essay, short-answered and test questions	65

Assessment comments
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At least 70% of attendance. At least 4.5 over 10 in the final exam and seminars. At least 4 over 10 in the lab exam and case studies.

The student will have two opportunities at June and July, no qualifications will be kept for forthcoming years.

"No presentado" will be achieved only if the student has participated in less than 30% of the total activities.

For part time students and those with any disabilities, the attendance may be substituted by an essay proposed by the professor and evaluated in a personal meeting.

## Sources of information

<b>Basic</b>	Teoría: BARNES, C. (2001). Invitación a la Biología. Panamericana. DIAZ-GONZALEZ, T.E.; FERNÁNDEZ-CARVAJAL, M.C. & FERNÁNDEZ, J. A. (2004). Curso de Botánica. Ediciones Trea, Gijón. FONT I QUER, P. (1982). Iniciación a la Botánica. Editorial Fontalba. FONT I QUER (1987). Plantas medicinales. El Dioscórides renovado. Labor. FONT I QUER, P. (1993). Diccionario de Botánica. Labor, Barcelona. IZCO, J.; BARRENO, E.; BRUGUÉS, M.; COSTA M.; DEVESA, J.; FERNÁNDEZ, F.; GALLARDO, T.; LLIMONA, X; SALVO, E; TALAVERA, S. & VALDÉS, B. (2004). Botánica. McGraw-Hill, Madrid. NABORS, M.W. (2006). Introducción a la Botánica. Pearson. REECE, C. et al. (2008). Biology. Pearson International Edition. SCAGEL, R.; BANDONI, R.J.; ROUSE, G.E.; SCHOFIELD, G.E.; STEIN, J.R. & TAYLOR, T.M. (1987). El Reino Vegetal. Omega, Barcelona. STRASBURGER, E., F. NOLL, H. SCHENCK & A.F.W. SCHIMPER. (2004). Tratado de Botánica (actualizado por P. SITTE et al.) Omega, Barcelona. Prácticas:
<b>Complementary</b>	

## Recommendations

Subjects that it is recommended to have taken before

Subjects that are recommended to be taken simultaneously

Subjects that continue the syllabus

Plant Systematics: Cryptogamia/610G02024

Plant Systematics: Phanerogamia/610G02025

Botanical Geography: Geobotany/610G02026

## Other comments

It is highly recommended that you take this course before any of other continuing subjects (mostly Botánica Sistemática: Criptogamia, Botánica Sistemática: Phanerogamia and Xeobotánica)

(\*)The teaching guide is the document in which the URV publishes the information about all its courses. It is a public document and cannot be modified. Only in exceptional cases can it be revised by the competent agent or duly revised so that it is in line with current legislation.