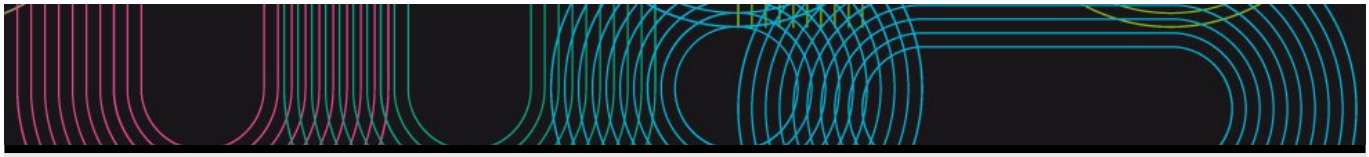

IDENTIFYING DATA				
Botany				
Subject	Botany			
Code	P03G370V01303			
Study programme	(*)Grao en Enxeñaría Forestal			
Descriptors	ECTS Credits	Type	Year	Quadmester
	6	Mandatory	2nd	1st
Teaching language				
Department				
Coordinator	Paz Bermudez, Maria Graciela			
Lecturers	Paz Bermudez, Maria Graciela			
E-mail	graciela@uvigo.es			
Web	http://http://faitic.uvigo.es/index.php/es/			
General description	(*)Coñece-los conceptos básicos e a terminoloxía específica para aprender a diferencia-los grandes grupos de organismos que estuda a Botánica, incidindo nos grupos con maior presencia no ámbito forestal galego.			

Competencies		
Code		Typology
CG1	CG-01: Capacidade para comprender os seguintes fundamentos necesarios para o desenvolvemento da actividade profesional: Biolóxicos.	• know • Know How
CG6	CG-06: Capacidade para identificar os diferentes elementos: elementos bióticos.	• know • Know How
CG8	CG-08: Capacidade para identificar os diferentes elementos: recursos naturais renovables susceptibles de protección, conservación e aproveitamento.	• know • Know How
CG14	CG-14: Capacidade para o uso das técnicas de protección do medio forestal.	• Know How
CG16	CG-16: Capacidade para o uso das técnicas de conservación da biodiversidade.	• Know How
CE15	(*)CE-15: Capacidade para coñecer, comprender e utilizar os principios de: botánica forestal.	• know • Know How
CT20	(*)CBS 8: Sensibilidade cara a temas ambientais.	• Know be

Learning outcomes	
Learning outcomes	Competences
(*)	CG1 CG6 CG8 CG14 CG16 CE15 CT20

Contents	
Topic	
1. Concept of Botanist.	Categories and taxonomic unities. Botanic nomenclature.
2. Morphological levels of vegetal organization.	Traffic of Therophytes to Cormophytes. Generalities of the vascular plants and its adaptive advantages.
3. The reproduction	Types of reprodution. Biological cycles. Alternation of generations and his importance.
4. The plants with seed (Spermatophytes).	General characters. Root and cut. Main type and modifications. The leaf, special trainings and philotaxic. Forms of life.
5. The flower.	Concept of flower in gymnosperms and angiosperms. Floral receptacle. Perianth. Androceo. Xineceo. Inflorescences

6. Pollination	Main type and floral syndromes. Evolution of the flower in relation of type of pollination
7. Fertilization	Differences between the fertilization in Gymnosperms and Angiosperms. Training of the seed. Fruits and Infoscences. Dispersion.
8. Gymnosperms	General characters. Reproduction: Vital cycle. Main groups. Division Cycadophyta. Division Ginkgophyta.
9. Division Coniferophyta. General characteristics. Class Coniferopsida	General characteristics. Class Coniferopsida
10. Order Coniferales, Family Pinaceae.	General characteristics. Ecological importance, forestal and economic. Genders more representative.
11. Family Cupressaceae.	General characteristics. Genders more representative.
12. Family Taxodiaceae.	General characters. Genders more relevants. Forestal importance and examples. Family Araucariaceae, species more relevants.
13. Quotation of the families Podocarpaceae and Cephalotaxaceae. Order Taxales, Family Taxaceae, species more relevants and forestal importes.	(*).
14. Anxiospermas. Div. Magnoliophyta General characters.	Reproduction: Vital cycle. Differential characters go in the classes Magnoliopsida (Dicotyledonous) and Liliopsida (monocotiledóneas).
15. Magnolipsida Class (dicotyledonous). Subclase 1: Magnoliidae. General characters.	Families: Magnoliaceae, Lauraceae, Ranunculaceae, Berberidaceae. Genders and species more important and examples.
16. Subclass 2: Hamamelididae.	General characters of the families Hamamelidaceae and Platanaceae. Species of forestal and ornamental interest.
17. Special quotation of the families Fagaceae and Betulaceae.	Genders and species more relevants. Ecological and economic interest.
18. Family Juglandaceae. General characters of the families Ulmaceae and Moraceae.	(*).
19. Subclass 3: Caryophyllidae.	General characters. Quotation of the most important orders. Examples.
20. Subclass 4: Dillenidae.	General characters of the families of main economic and forestall: Theaceae, Tiliaceae, Cistaceae, Salicaceae, Brasicaceae, Ericaceae.
21. Subclass 5: Rosidae.	Families of main forstal interest: Rosaceae, Leguminosaceae, Myrtaceae, Aquifoliaceae, Rutaceae, Anacardiaceae, Hippocastanaceae, Aceraceae, Rhamnaceae, Buxaceae.
22. Subclass 6: Asteridae.	Quotation of the most representative families: Solanaceae, Caprifoliaceae, Lamiaceae, Oleaceae and Asteraceae
23. Class Liliopsida (monocotiledoneas).	Differential characters and families more significant.
24. Concept of Geobotanic	Distribution of the plants and floristic territories. Biogeographic kingdoms.

Planning

	Class hours	Hours outside the classroom	Total hours
Outdoor study / field practices	2	0	2
Laboratory practises	16	10	26
Autonomous troubleshooting and / or exercises	4	28	32
Master Session	30	60	90

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

Methodologies

	Description
Outdoor study / field practices	Activities application of knowledge to specific situations and basic skills acquisition and related procedural matter under study. They thrive in nonacademic outdoor spaces. Among them we can cite practical field visits to events, research centers, companies, institutions ... academic-professional interest to the student.
Laboratory practises	Activities application of knowledge to specific situations and basic skills acquisition and related procedural matter under study. Special spaces are developed with specialized equipment (scientific and technical laboratories, languages, etc.).
Autonomous troubleshooting and / or exercises	Actividade in which problems are formulated and / or exercises related to the course. The student must develop the analysis and resolution of problems and / or exercises independently.
Master Session	Presentation by the teacher of the contents on the subject under study, theoretical and / or guidelines for a job, exercise or project to be developed by the student.

Personalized attention

Methodologies	Description
Laboratory practises	

Autonomous troubleshooting and / or exercises	

Assessment			
	Description	Qualification	Evaluated Competencess
Master Session	(*)Proba con preguntas tipo test, de resposta curta e de resposta longa; o alumnado deberá demostrar os coñecementos adquiridos. Avalían-se as competencias A2,A8,A68	70	CG1 CG6 CE15
Laboratory practises	(*)Farase unha avaliación continua ó alumnado das actividades plantexadas nas clases prácticas.Ó final do curso o alumnado deberá entregar unha memoria final e/ou realizar unha proba sobre identificación de distintos pliegos de especies forestais. Avalíanse as competencias A10,A18,A20	20	CG8 CG14 CG16
Outdoor study / field practices	(*)No exame de laboratorio integraranse os coñecementos adquiridos nas saídas de campo. Avalíase a competencia B20	5	CT20
Autonomous troubleshooting and / or exercises	(*)No exame da sesión magistral integraranse os coñecementos adquiridos coa resolución de problemas dun xeito autónomo. Ó final do curso o alumnado deberá entregar un herbario formado, principalmente, polas especies forestais tratadas na parte teórica e/ou un traballo bibliográfico ou de investigación. Estes coñecementos poderán integrararse no exame de laboratorio ou valorarse dun xeito independiente Avalíanse as competencias A68,B20	5	CE15 CT20

Other comments on the Evaluation

Sources of information

Basic Bibliography

Complementary Bibliography

Díaz González T. E., Fernández-Carvajal M. C., Fernández Prieto J. A., Curso de Botánica, Ed. Trea, Oviedo, 2004

Izco J. (coord.)., Botánica, Ed. McGraw- Hill. Interamericana, Madrid., 2004

Nabors M.W., Introducción a la Botánica, Ed. Pearson, Madrid., 2006

Strasburger, E., Tratado de Botánica, Ed. Omega, Barcelona, 2004

Blanco Castro, E. et al., Los Bosques Ibéricos. Una interpretación Geobotánica., Ed. Planeta, Barcelona, 2005

Castro, M.; Prunell, A. & Blanco-Dios, J., Guía das árbores autóctonas e ornamentais de Galicia., Ed. Xerais, Vigo, 2007

Castroviejo,S. (coord.), Flora iberica: Plantas vasculares de la Península Ibérica e Islas Baleares., Real Jardín Botánico, C.S.I.C. Madrid, 1986-2010

García, X.R., Guía das plantas de Galicia, Ed. Xerais, Vigo, 2008

López González, G., Guía de los árboles y arbustos de la península Ibérica y Baleares, Mundi-Prensa Libros, 2007

Carrión, J.S., Evolución vegetal, DM, 2003

Niño Ricoi, H., Guía das árbores de Galicia, Bahia, 1997

Polunin, O. & Smythies, B.E,, Guía de campo de las flores de España, Portugal y Sudoeste de Francia, Omega, 2004

Recommendations

Subjects that continue the syllabus

Biology: Plant Biology/P03G370V01201

Forestry Ecology/P03G370V01402