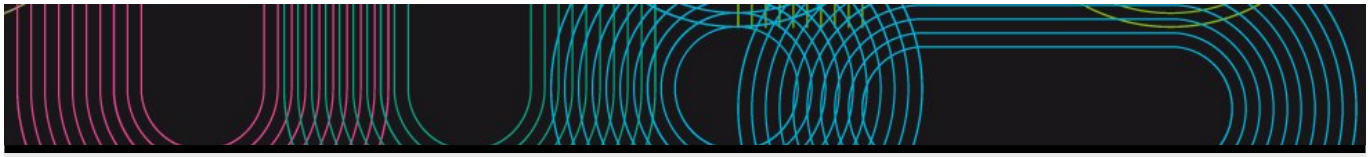

IDENTIFYING DATA				
Botany				
Subject	Botany			
Code	P03G370V01303			
Study programme	(*)Grao en Enxeñaría Forestal			
Descriptors	ECTS Credits	Choose	Year	Quadmester
	6	Mandatory	2nd	1st
Teaching language				
Department				
Coordinator	Paz Bermudez, Maria Graciela			
Lecturers	Paz Bermudez, Maria 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	
B1	Ability to understand the biological, chemical, physical, mathematical and representation systems necessary for the development of professional activity, as well as to identify the different biotic and physical elements of the forest environment and renewable natural resources susceptible to protection, conservation and exploitations in the forest area.
B2	Ability to analyze the ecological structure and function of forest systems and resources, including landscapes.
C15	Ability to know, understand and use the principles of: forest botany.
C36	Ability to solve technical problems derived from the management of natural spaces. Conservation of biodiversity.
D2	Ability to communicate orally and written in Spanish or in English
D3	Ability to communicate orally and in writing specifically in the Galician language
D4	Sustainability and environmental commitment

Learning outcomes			
Expected results from this subject	Training and Learning Results		
New	B1	C15	D2
	B2	C36	D3
			D4

Contents	
Topic	
1. Concept of Botanist.	Categories and taxonomic unities. Botanic nomenclature.
3. The reproduction	Types of reprodution. Biological cycles. Alternation of generations and his importance.
2. Morphological levels of vegetal organization.	Traffic of Therophytes to Cormophytes. Generalities of the vascular plants and its adaptive advantages.
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.
13. Quotation of the families Podocarpaceae and Cephalotaxaceae. Order Taxales, Family Taxaceae, species more relevants and forestal importes.	(*)Especies máis relevantes e importancia ecolóxica e forestal.
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.	(*)Especies máis relevantes e importancia forestal
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
Studies excursion	2	0	2
Laboratory practical	16	10	26
Autonomous problem solving	4	28	32
Lecturing	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
Studies excursion	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 practical	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 problem solving	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.
Lecturing	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 assistance

Methodologies	Description
Laboratory practical	
Autonomous problem solving	

Assessment

Description	Qualification	Training and Learning Results

Studies excursion	(*)No exame de laboratorio integraranse os coñecementos adquiridos nas saídas de campo. Avalíase a competencia B20	5		
Laboratory practical	(*)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		
Autonomous problem solving	(*)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 integrarse no exame de laboratorio ou valorarse dun xeito independiente Avalíanse as competencias A68,B20	5		C15
Lecturing	(*)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	B1	C15

Other comments on the Evaluation

Tests dates:

First call: 9th january 2020 at 10.00h (theorical test) and 12.30h (practical test)
Second call: 1th july 2020 at 16.00h (theorical test) and 18.30h (practical test)

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,

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

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

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

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

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

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

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

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

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

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

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

https://www.arbolesibericos.es/,

Recommendations

Subjects that continue the syllabus

Biology: Plant Biology/P03G370V01201
Forestry Ecology/P03G370V01402

Contingency plan