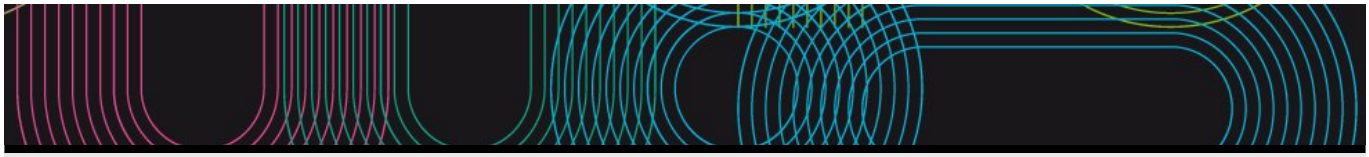

IDENTIFYING DATA				
Marine Botany				
Subject	Marine Botany			
Code	V10G060V01302			
Study programme	(*)Grao en Ciencias do Mar			
Descriptors	ECTS Credits	Choose	Year	Quadmester
	6	Mandatory	2nd	1st
Teaching language	Spanish English			
Department				
Coordinator	Sánchez Fernández, José María			
Lecturers	Castro Cerceda, María Luísa Muñoz Sobrino, Castor Sánchez Fernández, José María			
E-mail	jmsbot@uvigo.es			
Web				
General description	Study of the main marine plant groups, classification, life habits and interactions with other groups and the environment			

Competencies	
Code	
A1	Students have demonstrated knowledge and understanding in a field of study that builds upon their general secondary education, and is typically at a level that, whilst supported by advanced textbooks, includes some aspects that will be informed by knowledge of the forefront of their field of study
A2	Students can apply their knowledge and understanding in a manner that indicates a professional approach to their work or vocation, and have competences typically demonstrated through devising and sustaining arguments and solving problems within their field of study
A3	Students have the ability to gather and interpret relevant data (usually within their field of study) to inform judgments that include reflection on relevant social, scientific or ethical issues
A4	Students can communicate information, ideas, problems and solutions to both specialist and non-specialist audiences
A5	Students have developed those learning skills that are necessary for them to continue to undertake further study with a high degree of autonomy
C1	To know the vocabulary, codes and concepts inherent to the oceanographic scientific field
C3	Critical understanding of the history and current status of the Marine Sciences
C4	To know the basic techniques to sample the water column, organisms, sediments and sea bottom, as well as the surveying methods for dynamic and structural variables
C17	Ability to survey in the field and to work in the laboratory responsibly and safely, encouraging team work
C18	To transmit writing, verbal and graphical information for audiences of various types
C20	To find and evaluate marine resources of various kinds
D1	Analysis and synthesis ability
D2	Organization and planning skills
D3	Written and oral communication in the official languages of the University
D5	Information technology skills (search and data analysis)
D8	Teamwork ability
D9	Critical-review and self-criticism capacity
D11	Ability to learn independently and continuously
D13	Ability to generate new ideas (creativity)
D15	Ability to apply knowledge in practice
D16	Research skills
D17	Sensitivity towards environmental issues

Learning outcomes	
Expected results from this subject	Training and Learning Results

To know the origin and evolution of the marine plants and the features of the main groups	A1 A2 A3 A4 A5	C1 C3 C20	D3 D5
To acquire the skills to collect, prepare, analyze, identify and preserve plant samples		C4 C17 C20	D1 D2 D11 D15 D16 D17
To acquire the capacity to deepen in the autonomous learning on the problems related to the Marine Botany, and to communicate that knowledge in an efficient way	A3 A4 A5	C18	D1 D2 D3 D5 D8 D9 D11 D13 D15 D16 D17

Contents	
Topic	
1. Introduction to Botany	1.1. Definition of Botany 1.2. Groups of plants 1.3. Relationship with the degree
2. Plant reproduction	2.1. Asexual reproduction 2.2. Sexual reproduction
3. Procariotic algae	3.1. Main featuress of Cyanophyta 3.2. Main features of Prochlorophyta
4. Introduction to the eukaryotic algae	4.1. Origin of the main lines of photosynthetic organisms 4.2. Phylum Gaucophyta 4.3. Phylum Euglenophyta
5. Unicellular phyla; main features	5.1. Phylum Cryptophyta 5.2. Phylum Haptophyta 5.3. Phylum Pyrrophyta
6. Phylum Ochrophyta (Heterokontophyta) I	Main features
7. Phylum Ochrophyta (Heterokontophyta) II	7.1. Class Xantophyceae 7.2. Class Bacillariophyceae
8. Phylum Ochrophyta (Heterokontophyta) III	8.1. Class Phaeophyceae. Main features
9. Phylum Ochrophyta (Heterokontophyta) III	9.1. Main features of Bangiophyceae 9.2. Main features of Floridophyceae
10. Phylum Chlorophyta I	10.1. Main features of Prasinophyceae 10.2. Main features of Chlorophyceae 10.3. Main features of Bryopsidophyceae 10.4. Main features of Ulvophyceae 10.5. Main features of Zygnematophyceae
11. Ecology and ethnobotany of algae	11.1. Introduction to the study of the marine algae communities 11.2. Uses of the algae
12. Introduction to the flowering plants	12.1. Main features and life cycle 12.2. Adaptations to the coastal environment
13. Coastal vegetation	13.1. Introduction
14. Fungi and lichens	14.1. Main features

Planning			
	Class hours	Hours outside the classroom	Total hours
Laboratory practises	8	4	12
Outdoor study / field practices	5	9.5	14.5
Group tutoring	3	6	9
Master Session	25	37.5	62.5
Jobs and projects	8	40	48
Other	3	0	3
Reports / memories of practice	1	0	1

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

Methodologies	
	Description
Laboratory practises	Study and identification of the main groups of algae
Outdoor study / field practices	"In situ" study of the main algal communities and coastal vegetation of the Atlantic Coast of Galicia
Group tutoring	Discussion of the work of each group; questions and doubt solution
Master Session	Master class of each lesson of the theory program, supported on infographic materials

Personalized attention	
Methodologies	**Description**
Master Session	Classroom lesson with support on audiovisual material, trying to make them as participatory as possible
Laboratory practises	Study of the morphology, systems of reproduction and identification of the main groups of seaweeds. Use of laboratory material, mainly optical equipment (stereo microscope and microscope)
Outdoor study / field practices	Study of the main communities of coastal plants, and their adaptations to live under marine influence
Group tutoring	By groups, work on two aspects related with the development of the course: in the first place how to develop a scientific/technical report, and second methods of phylogenetic reconstruction, which are used during all the course as a link that relates the biological groups. The schedules of office hours will be the Mondays and Tuesday of 10-13h

Assessment					
	Description	Qualification	Training and Learning Results		
Jobs and projects	Public presentation of the groups' reports	15	A1 A2 A3 A4 A5	C1 C18	D3 D5 D11
Other	Exam on the theory of the course	65	A4	C1 C3 C18	D3 D5 D11
Reports / memories of practice	Evaluation of the reports on the field and laboratory sessions	20	A5	C4 C17 C18 C20	D3 D11

Other comments on the Evaluation

IT IS NECESSARY to reach half of the note in each one of the three evaluations in order to pass the course.

Those activities that were not evaluated during the regular course (first exams), will have to be evaluated before the corresponding exam.

The participation in any of the activities implies that the final qualification will be different "not presented"

It is required that the students in this course behave in a responsible and honest way.

It is deemed inadmissible any form of fraud (i.e. copy and / or plagiarism) in any type of test or report designed to evaluate the level of knowledge or skill achieved by a student. Any fraudulent conduct shall be firmly punished according to the current regulations.

Sources of information

Izco, J. (Ed.), **Botánica**, 2,

Graham, J.E., Wilcox, L.W., Graham, L.E., **Algae**, 2,

van den Hoek, C., **Algae**, 1,

Lee, R.E., **Phycology**, 4,

Dawes, C.J., **Marine Botany**, 2,

Varios, **Artículos en Revistas**,

Recommendations

Subjects that continue the syllabus

Marine Ecology/V10G060V01401
Marine and coastal management/V10G060V01704

Subjects that it is recommended to have taken before

Biology: Biology I/V10G060V01101
Biology: Biology 2/V10G060V01201