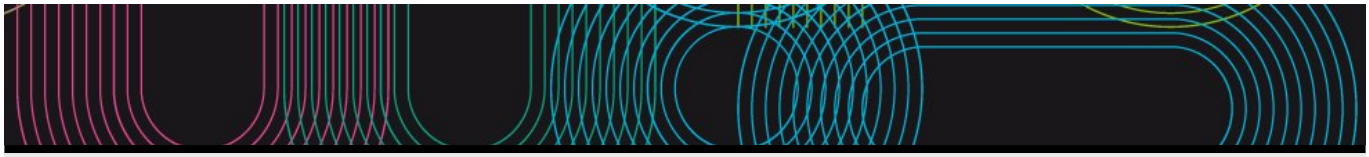

IDENTIFYING DATA				
Marine botany				
Subject	Marine botany			
Code	V10G061V01202			
Study programme	Grado en Ciencias del Mar			
Descriptors	ECTS Credits	Choose	Year	Quadmester
	6	Mandatory	2nd	1st
Teaching language	#EnglishFriendly Spanish Galician English			
Department				
Coordinator	Sánchez Fernández, José María			
Lecturers	García Molares, Aida García Moreiras, Iria Muñoz Sobrino, Castor Navarro Echeverría, Luis Sánchez Fernández, José María			
E-mail	jmsbot@uvigo.es			
Web	http://https://mar.uvigo.es/			
General description	Study of the main marine plant groups, classification, life habits and interactions with other groups and the environment. English Friendly subject: International students may request from the teachers: a) resources and bibliographic references in English, b) tutoring sessions in English, c) exams and assessments in English.			

Training and Learning Results

Code	
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
C4	Know, analyze and interpret the physical properties of the ocean according to current theories, as well as to know the most relevant sampling tools and techniques.
D1	Develop the search, analysis and synthesis of information skills oriented to the identification and resolution of problems.
D2	Acquire the ability to learn autonomously, continuously and collaboratively, organizing and planning tasks over time.
D3	Understanding the meaning and application of the gender perspective in different fields of knowledge and in professional practice with the aim of achieving a more just and equal society.
D5	Sustainability and environmental commitment. Equitable, responsible and efficient use of resources.

Expected results from this subject

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	A2 A3 A4 A5	D3 D5
To acquire the skills to collect, prepare, analyze, identify and preserve plant samples	C4	D1 D2

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	D1 D2 D3 D5

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 practical	9	9	18
Field practice	4	10	14
Seminars	3	0	3
Mentored work	4	23	27
Lecturing	25	25	50
Problem and/or exercise solving	2	10	12
Problem and/or exercise solving	2	0	2
Report of practices, practicum and external practices	1	5	6
Case studies	0	3	3
Essay	3	14	17

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

Methodologies	
	Description
Laboratory practical	Study and identification of the main groups of algae Attendance at this activity IS MANDATORY
Field practice	"In situ" study of the main algal communities and coastal vegetation of the Atlantic Coast of Galicia Attendance at this activity IS MANDATORY
Seminars	Guidelines for the elaboration of a scientific report. Approach to the phylogenetic analysis in marine plants.
Mentored work	Planification and elaboration of a bibliographic or experimental work by the students
Lecturing	Master class of each lesson of the theory program, supported on infographic materials

Personalized assistance

Methodologies	Description
Lecturing	Students will be able to ask the questions they consider during each session,. Students can attend personalized tutorials to solve doubts, mainly at the times indicated for each lecturer.
Laboratory practical	Students will be able to ask the questions they consider during each session, both to the lecturer and collaboratively among themselves. Students can attend personalized tutorials to solve doubts, mainly at the times indicated for each lecturer.
Field practice	Students will be able to ask the questions they consider during each session, both to the lecturer and collaboratively among themselves. Students can attend personalized tutorials to solve doubts, mainly at the times indicated for each lecturer.
Seminars	Students will be able to ask the questions they consider during each session, to the lecturer during the explanation of the activity, and collaboratively among themselves while performing the task. Students can attend personalized tutorials to solve doubts, mainly at the times indicated for each lecturer.
Mentored work	Students can attend personalized tutorials to solve doubts, mainly at the times indicated for each lecture

Assessment

	Description	Qualification	Training and Learning Results		
Problem and/or exercise solving	Exam relating to the theoretical part of the course	40	A2 A5		
Problem and/or exercise solving	Three QUESTIONNAIRES (tests) related to the main blocks of the subject (introductory, unicellular groups, multicellular groups and vegetation). The questionnaires do not "discount contents", are only an aid to the study. The grades obtained will only be considered in the First Opportunity; in the Second Opportunity the evaluation of the theoretical part will be exclusively through an Exam.	15	A2 A5		
Report of practices, practicum and external practices	Evaluation of INDIVIDUAL REPORTS referring to the activities on the practical classes in the field and laboratory. In case of not passing this part in the First Opportunity, a practice exam must be taken in the Second Opportunity.	25	A5	C4	D3
Case studies	INDIVIDUAL REPORT on the case study proposed and developed in the Seminars. If necessary, recovery in the Second Chance will be carried out through a test Exam	5	A2 A3 A4		D1 D2
Essay	Collaborative preparation of a written report, and public presentation of the supervised works. In case of not passing this part in the First Opportunity, an individual report must be done for the Second Opportunity.	15	A2 A3 A4 A5		D3 D5

Other comments on the Evaluation

FIRST OPPORTUNITY

The final grade will be the sum of the partial grades obtained in each of the proposed tests, but only if the grade of each of one of them is greater than 40% of the maximum grade for that test. If that minimum is not reached, the final grade will be FAIL.

Students who do not attend the final Theory Exam or the practice test will be qualified as NOT PRESENTED.

Attendance at practical classes IS MANDATORY, and therefore that student who does not attend to all classes without a just cause cannot be evaluated in this part and will not be able to recover this part in the Second Opportunity.

SECOND OPPORTUNITY

In the Second Opportunity the results already approved in the First Opportunity will be preserved, except for the Theory questionnaires: since they do not 'discount contents' all the Theory content must be recovered together in the Exam, which

increases its weight in the final grade up to 55%.

In the Second Opportunity, the practical grade can be recovered with a practice exam, with the same weight in the final grade (25%).

In the Second Opportunity, those students who had not reached half of the grade of the Collaborative Essay in the First Opportunity (0.7), must repeat the Work but individually and with the same weight in the final grade (1.5).

In the Second Opportunity, the seminars grade (5%) can be recovered through an "Exam of objective questions" (test).

As in the First Opportunity, the final grade will be the sum of the partial grades obtained in each of the proposed tests, but only if the grade of each of one of them is greater than 40% of the maximum grade for that test.

In case of not passing the course, the qualifications of the seminars and the supervised works may be kept from one course to the next, but only once.

Global assessment option

The application for this evaluation option must be submitted in the time and manner determined by the Center, which will be published prior to the academic start. Given the experimental nature of the practices, attendance at them is mandatory to be eligible for this evaluation option. The weight of practices will be the same as for the continuous assessment (25%), and the rest of the grade can be obtained with the final exam. In any case, half of the qualification must be obtained for each part (practice and theory) in order to pass the course. **Failure to attend the practices, with no justified cause invalidates this possibility, as well as the opportunity for extraordinary evaluation (2nd opportunity).**

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 fraud on the part of the student will result in failing the course; further fraud will lead to start disciplinary actions in front of the Rectorate

Sources of information

Basic Bibliography

Izco, J. (Ed.), **Botánica**, 2, McGraw-Hill/Interamericana,
Graham, J.E., Wilcox, L.W., Graham, L.E., **Algae**, 2, Benjamin Cummings,
Lee, R.E., **Phycology**, 4, Cambridge University Press,

Complementary Bibliography

van den Hoek, C., **Algae**, 1, Cambridge University Press,
Dawes, C.J., **Marine Botany**, 2, Wiley,
Varios, **Artículos en Revistas**,

Recommendations

Subjects that continue the syllabus

Marine Ecology/V10G061V01206

Subjects that it is recommended to have taken before

Biology: Biology I/V10G061V01101
Biology: Biology 2/V10G061V01106

Other comments

This Guide will be detailed further in the MOOVI platform at the beginning of the course.