



IDENTIFYING DATA

Marine Botany

Subject	Marine Botany			
Code	V02M098V01102			
Study programme	(*)Máster Universitario en Bioloxía Mariña			
Descriptors	ECTS Credits	Choose	Year	Quadmester
	3	Mandatory	1st	1st
Teaching language	Spanish			
Department				
Coordinator	García Estévez, José Manuel Bárbara Criado, Ignacio Manuel			
Lecturers	Bárbara Criado, Ignacio Manuel García Estévez, José Manuel López Rodríguez, María del Carmen			
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Web				
General description	(*)Estudio de los principales organismos (fitoplancton y fitobentos) que se desarrollan en el medio marino, así como de los factores que condicionan su distribución.			

Competencies

Code	
A1	(*)Posuír e comprender coñecementos que acheguen unha base ou oportunidade de ser orixinais no desenvolvemento e/ou aplicación de ideas, adoitado nun contexto de investigación.
A2	(*)Que os estudantes saiban aplicar os coñecementos adquiridos e a súa capacidade de resolución de problemas en contornos novos ou pouco coñecidos dentro de contextos máis amplos (ou multidisciplinares) relacionados coa súa área de estudo.
A3	(*)Que os estudantes sexan capaces de integrar coñecementos e se enfrontar á complexidade de formular xuízos a partir dunha información que, sendo incompleta ou limitada, inclúa reflexións sobre as responsabilidades sociais e éticas vinculadas á aplicación dos seus coñecementos e xuízos.
A4	(*)Que os estudantes saiban comunicar as súas conclusións, e os coñecementos e razóns últimas que as sustentan, a públicos especializados e non especializados dun xeito claro e sen ambigüidades.
A5	(*)Que os estudantes posúan as habilidades de aprendizaxe que lles permitan continuar estudando dun xeito que terá que ser, en grande medida, autodirixido e autónomo.
B1	Utilización de criterios y métodos científicos en el planteamiento y resolución de problemas aplicando los conocimientos adquiridos
B2	Búsqueda, análisis e integración de información a partir de diferentes fuentes y capacidad para su interpretación y evaluación
B6	Desarrollo de la curiosidad científica, de la iniciativa y la creatividad
C2	Conocimiento de la diversidad de organismos marinos y sus estrategias adaptativas
C3	Conocimiento y comprensión de las interacciones de los organismos marinos y los ecosistemas marinos y costeros
C7	Catalogación, evaluación, conservación, restauración y gestión de áreas marinas y litorales protegidos. Elaboración, asesoramiento legal y ejecución de planes de ordenación del litoral
D1	Desarrollo de las capacidades comprensivas, de análisis y síntesis
D4	Desarrollo de la capacidad para actualizar el conocimiento de forma autónoma
D5	Desarrollo de las habilidades de comunicación y discusión de planteamientos y resultados

Learning outcomes

Expected results from this subject	Training and Learning Results
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New	A1 A3 A4 B6 D1
New	B1 C2 C3 C7
New	A2 C7 D1 D5
New	A5 B2 D4

Contents

Topic	
Generalities	<p>Subject 1. Marine habitat. Introduction and general characters. Influential environmental factors in the photosynthetic organisms: light, temperature, substrata, hidrodinamism, tides, salinity, pH, nutrients and pollution. Interactions between organisms: predation, simbiosis, epibiosis, endobiosis, parasitism.</p> <p>Subject 2. Phytoplankton. General characters, importance, floristic groups and populational dynamics.</p> <p>Subject 3. Fitobentos. General characteristics of their communities. Classification of bentic organisms according to sustrata. Adaptations to the hábitat conditions . Morphological diversity, life histories, biological types and vital forms.</p>
Diversity	<p>Subject 4. Descriptive and systematic of red seaweeds (Rhodophyta): main groups and characteristic species.</p> <p>Subject 5. Descriptive and systematic of Brown seaweeds (Ochrophyta): main groups and characteristic species.</p> <p>Subject 6. Descriptive and systematic of green seaweeds (Chlorophyta): main groups and characteristic species.</p> <p>Subject 7. Descriptive and systematic of other bentic organisms: Cyanophyta, seagrass, fungi and lichens: main groups and characteristic species.</p>
Ecology and biogeography	<p>Subject 8. Ecology of the fotobent. Distribution of the marine organisms: vertical or zonation, temporal and spatial sucession. Diagrams of zonation of the seaboard and his nomenclature.</p> <p>Subject 9. Biogeography. Definition, methodology and indexes. Factors that influence in the distribution of the marine vegetables: temperature and latitude.</p> <p>Subject 10. Marine vegetation in the Atlantic North and Mediterranean.</p> <p>Subject 11. Marine vegetation of the Iberian Peninsula and of Galicia. Exposed coasts, semiexposed and protected sites. Diversity, descriptive and zonation.</p>

Planning

	Class hours	Hours outside the classroom	Total hours
Lecturing	12	18	30
Seminars	8	24	32
Seminars	2	2	4
Mentored work	0	9	9

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

Methodologies	
	Description
Lecturing	FACE-TO-FACE CLASSES FOR EXHIBITION, BY PART OF THE PROFESSOR, OF THE CONTENTS OF THE MATTER And THE DEVELOPMENT OF THE *TEMARIO, EXPLANATION OF CONCEPTS And APPROACH OF THE SEMINARS.
Seminars	AUTONOMOUS WORK OF THE STUDENT FOR THE STUDY And ASSIMILATION OF THEORETICAL And PRACTICAL CONCEPTS, AS WELL AS FOR THE RESEARCH OF INFORMATION And BIBLIOGRAPHY FOR THE REALISATION OF THE WORKS RELATED WITH THE SEMINARS.
Seminars	You INTERVIEW WITH THE *PROFESORADO FOR THE ADVICE And DEVELOPMENT OF THE ACTIVITIES OF THE MATTER IN THE PROCESS OF THE LEARNING.
Mentored work	WORKS/DOCUMENTS/INFORMATION ELABORATED BY THE STUDENT, OF AUTONOMOUS WAY, FOR THE DEVELOPMENT OF THE SEMINARS. ALWAYS, UNDER THE GUIDELINES OF THE PROFESSOR IN WHAT it CONCERNS To THEMATIC, QUESTIONS To DEVELOP And USES OF SOURCES OF INFORMATION.

Personalized assistance

Methodologies	Description
Seminars	It will attend to the students personally via face-to-face in the classroom, by telematic systems and by email, as well as in the office (Monday to Wednesday (4 to 6 p.m.).

Assessment

	Description	Qualification	Training and Learning Results			
Lecturing	Evaluation by means of an objective proof written that will include ask type test, definitions, short questions and subjects to develop.	70	A2 A3 A4	B1 B2 C7	C2 C3	D1 D5
Seminars	Evaluation of the attitude and the degree of participation (asks/answer) by part of the student in each one of the seminars.	20	A1 A2 A3 A5	B1 B2 B6	C7	D4
Mentored work	Evaluation of the content and quality of the work realised by the student in the thematic of the seminars.	10	A2 A4	B6		D1 D5

Other comments on the Evaluation

It will necessary to obtain a mark of 5 over 10 in the exam.

Sources of information

Basic Bibliography

Complementary Bibliography

Lobban, C.S. & P.J. Harrison, **Seaweed ecology and physiology**, 1994

Graham, L. E., J. M Graham & L. W. Wilcox, **Algae**, 2009

Dawes, C.J., **Marine Botany**, 1997

Lüning, K., **Seaweeds their environment, biogeography and ecophysiology**, 1990

Reviere, B de, **Biologie et phylogénie des algues, tome 1, 2**, 2002, 2003

Hoek, C. van den, D.G. Mann, H.M. Jahns, **Algae: An Introduction to phycology**, 1995

Guiry & Guiry, <http://www.algaebase.org/>, 2020

Green, E.P. & F.T. Short, **World Atlas of Seagrasses**, 2003

Guillén, J.E., Ruiz, JM, Otero, M, Díaz-Almela, E., **Atlas de las praderas marinas de España**, 2015

Hurd, C.L., P.J. Harrison, K. Bischof & C.S. Lomman, **Seaweed Ecology and Physiology**, Cambridge, 2014

Recommendations

Subjects that continue the syllabus

Biology of Exploited and Potentially Exploitable Species/V02M098V01207

Invasive Species and Fouling/V02M098V01211

Sampling Techniques for Identification of Marine Organisms and Communities/V02M098V01201

Subjects that are recommended to be taken simultaneously

Marine Ecology/V02M098V01105

Physiology of Marine Organisms/V02M098V01106

Marine Zoology/V02M098V01103

Other comments

Contingency plan

Description

=== EXCEPTIONAL PLANNING ===

Given the uncertain and unpredictable evolution of the health alert caused by COVID-19, the University of Vigo establishes an extraordinary planning that will be activated when the administrations and the institution itself determine it, considering safety, health and responsibility criteria both in distance and blended learning. These already planned measures guarantee, at the required time, the development of teaching in a more agile and effective way, as it is known in advance (or well in advance) by the students and teachers through the standardized tool.

=== ADAPTATION OF THE METHODOLOGIES ===

* Teaching methodologies maintained

None

* Teaching methodologies modified

Non-face-to-face scenario: all (master class, seminars and supervised work) will be carried out telematics

Partially face-to-face scenario: all (master class, seminars and supervised work) will be carried out in a mixed face-to-face and telematic way

* Non-attendance mechanisms for student attention (tutoring)

Microsoft Teams or Forms: Teaching telematic teaching. Personalized and group attention (video, audio or chat) when students raise questions; also on demand from teachers.

Moodle: Repository of documents and teaching aid, also for information and communication with the students through the forum. In parallel, Dropbox will be used to share documents.

Email: Personalized and group attention to questions required by students, as well as teacher notifications

* Modifications (if applicable) of the contents

Not applicable.

* Additional bibliography to facilitate self-learning

Not necessary because it will be uploaded in pdf to the document repository.

* Other modifications

=== ADAPTATION OF THE TESTS ===

* Tests already carried out

Test XX: [Previous Weight 00%] [Proposed Weight 00%]

The percentages are maintained because the subject has no practical part and the theory can be taught and evaluated electronically.

Master class: [Previous weight 70%] [Purpose Weight 70%]

Seminar: [Previous weight 20%] [Purpose Weight 20%]

Supervised work: [Previous weight 10%] [Purpose Weight 10%]

* Pending tests that are maintained

Test XX: [Previous Weight 00%] [Proposed Weight 00%]

The percentages are maintained because the subject has no practical part and the theory can be taught and evaluated electronically.

Master class: [Previous weight 70%] [Purpose Weight 70%]

Seminar: [Previous weight 20%] [Purpose Weight 20%]

Supervised work: [Previous weight 10%] [Purpose Weight 10%]

* Tests that are modified

[Previous test] => [New test]

None.

* New tests
Not applicable.

* Additional Information
