Information about the subject

Degree: Bachelor of Degree in Marine Sciences

Faculty: Faculty of Veterinary Medicine and Experimental Sciences

Code: 272001 **Name:** Marine Botany

Credits: 6,00 **ECTS Year:** 2 **Semester:** 2

Module: Transversal Knowledge and Techniques in Marine Sciences

Subject Matter: Organisms and Systems **Type:** Compulsory

Department: Oceanography and Environment

Type of learning: Classroom-based learning

Languages in which it is taught: English, Spanish

Lecturer/-s:

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Module organization

Transversal Knowledge and Techniques in Marine Sciences

Subject Matter	ECTS	Subject	ECTS	Year/semester
Organisms and Systems	30,00	Marine Botany	6,00	2/2
		Marine Ecology	6,00	3/2
		Marine Microbiology	6,00	2/2
		Marine Zoology	6,00	2/1
		Physiology of Marine Organisms	6,00	2/2
Marine Geology	12,00	Geophysics and Tectonics	6,00	2/1
		Sedimentology	6,00	2/2
Geographic Information Systems and Remote Sensing	6,00	Geographic Information Systems and Remote Sensing	6,00	2/1
Statistics	6,00	Applied Statistics	6,00	2/1

Recommended knowledge

It has not established

Learning outcomes

At the end of the course, the student must be able to prove that he/she has acquired the following learning outcomes:

R1 The student knows the different morphologies and levels of organization, reproduction and vital cycles of marine flora.

R2 The student can distinguish the different studied algal groups and their characteristics.

R3 The student values the importance of Mediterranean communities and their complexity by showing sensitivity to their conservation and protection.

R4 The student knows and uses basic techniques for the collection of organisms in coastal sampling.

R5 The student is able to work in a laboratory performing correctly the basic operations both in the planning and development of each of the laboratory practices.

Competencies

Depending on the learning outcomes, the competencies to which the subject contributes are (please score from 1 to 4, being 4 the highest score):

BASIC		Weighting			
		1	2	3	4
CB2	Students are able to apply knowledge to their work in a professional way and have the competences enabling them to state and defend views and opinions as well as perform problem-solving tasks in their field of study.		x		
CB5	Students develop the necessary learning skills to undertake further studies with a high level of autonomy.			x	

GENERAL		Weighting			
		1	2	3	4
CG1	Capacity to analyze and synthesize				x
CG2	Capacity to organize and plan			x	
CG3	Mastering Spanish oral and written communication		x		
CG5	Knowing and applying Basic ITC skills related to marine science	x			
CG6	Capacity to manage information (capacity to look for and analyze information coming from different types of sources)			x	
CG7	Decision making			x	
CG8	Capacity to work in interdisciplinary and multidisciplinary team			x	
CG10	Critical and self-critical capacity		x		
CG11	Capacity to learn				x
CG12	Capacity to adapt to new situations	x			

CG13	Capacity to produce new ideas (creativity)	x			
CG16	Capacity to apply theoretical knowledge				x
CG18	Sensibility to environmental issues.				x

SPECIFIC		Weighting			
		1	2	3	4
CE2	Knowing basic sampling techniques of water column, organisms, sediment and sea-bottoms as well as basic techniques of dynamic and structural variable measurement			x	
CE6	Applying marine instrument techniques		x		
CE7	Collecting, assessing, processing and interpreting oceanographic data, following the most recent theories		x		
CE8	Identifying and analyzing new problems and proposing solution strategies	x			
CE9	Knowing how to carry out experiments and measurements both in the laboratory and during sample collection			x	
CE11	Knowing how to do fieldwork and laboratory experiments in a safe and responsible way, promoting teamwork		x		
CE12	Describing, classifying and mapping sea bottoms and coastal areas			x	
CE13	Looking for and assessing different kinds of marine resources			x	

Assessment system for the acquisition of competencies and grading system

Assessed learning outcomes	Granted percentage	Assessment method
R1, R2, R3	50,00%	Written test with theoretical and practical questions
R1, R2, R3, R4, R5	25,00%	Delivery of guided assignments, whose objectives and contents will be proposed by the teacher
R1, R2, R4, R5	15,00%	Laboratory test
R2, R3	10,00%	Oral presentation

Observations

This course is not eligible for single evaluation. According to the general evaluation and qualification regulations, the preferred evaluation system will be by means of continuous evaluation. Specifically: The evaluation item “Delivery of guided assignments, whose objectives and contents will be proposed by the professor” will be evaluated following a continuous evaluation system by means of deliveries in which the evolution of the work will be reviewed.
Attendance at practical sessions is mandatory.
A minimum score of 5 points is required on all evaluable items to average..
The use of artificial intelligence (AI)-based tools is subject to the discretion of the teacher, who may establish specific limits or conditions depending on the training or assessment activity.

MENTION OF DISTINCTION:
In accordance with the regulations governing the assessment and grading of subjects in force at UCV, the distinction of "Matrícula de Honor" (Honours with Distinction) may be awarded to students who have achieved a grade of 9.0 or higher. The number of "Matrículas de Honor" (Honours with Distinction) may not exceed five percent of the students enrolled in the group for the corresponding academic year, unless the number of enrolled students is fewer than 20, in which case a single "Matrícula de Honor" (Honours with 9 Distinction) may be awarded. Exceptionally, these distinctions may be assigned globally across different groups of the same subject. Nevertheless, the total number of distinctions awarded will be the same as if they were assigned by group, but they may be distributed among all students based on a common criterion, regardless of the group to which they belong. The criteria for awarding "Matrícula de Honor" (Honours with Distinction) will be determined according to the guidelines stipulated by the professor responsible for the course, as detailed in the "Observations" section of the evaluation system in the course guide.

Learning activities

The following methodologies will be used so that the students can achieve the learning outcomes of the subject:

M1 Teacher presentation of contents, analysis of competences, explanation and in-class display of skills, abilities and knowledge.

M2 Group work sessions supervised by the professor. Case studies, diagnostic tests, problems, field work, computer room, visits, data search, libraries, on-line, Internet, etc. Meaningful construction of knowledge through interaction and student activity.

M3 Activities carried out in spaces with specialized equipment.

M4 Supervised monographic sessions with shared participation.

M5 Application of multidisciplinary knowledge.

M6 Personalized and small group attention. Period of instruction and/or guidance carried out by a tutor to review and discuss materials and topics presented in classes, seminars, readings, papers, etc.

M8 Set of oral and/or written tests used in initial, formative or additive assessment of the student.

M9 Group preparation of readings, essays, problem-solving, seminars, papers, reports, etc. to be presented or submitted in theoretical , practical and/or small-group tutoring sessions. Work done on the university e-learning platform (www.plataforma.ucv.es)

M10 Student's study: Individual preparation of readings, essays, problem-solving, seminars, papers, reports, etc. to be presented or submitted in theoretical, practical and/or small-group tutoring sessions. Work done on the university e-learning platform (www.plataforma.ucv.es).

IN-CLASS LEARNING ACTIVITIES

	LEARNING OUTCOMES	HOURS	ECTS
ON-CAMPUS CLASS M1	R1, R2, R3	33,00	1,32
PRACTICAL CLASSES M2	R2, R3, R4, R5	8,00	0,32
LABORATORY M3	R1, R2, R4, R5	10,00	0,40
SEMINAR M4	R2, R3	2,00	0,08
GROUP PRESENTATION OF ASSIGNMENTS M5	R2, R3	3,00	0,12
TUTORIAL M6	R1, R2, R3, R4, R5	2,00	0,08
ASSESSMENT M8	R1, R2, R3, R4, R5	2,00	0,08
TOTAL		**60,00**	**2,40**

LEARNING ACTIVITIES OF AUTONOMOUS WORK

	LEARNING OUTCOMES	HOURS	ECTS
GROUP WORK M9	R1, R2, R3, R4, R5	18,00	0,72
INDEPENDENT WORK M10	R1, R2, R5	72,00	2,88
TOTAL		**90,00**	**3,60**

Description of the contents

Description of the necessary contents to acquire the learning outcomes.

Theoretical contents:

Content block	Contents
1. Introduction to Marine Botany	Concept of alga and general characteristics. Morphology and levels of organization of the marine flora. The algal cell. Photosynthesis and photosynthetic pigments. Types of reproduction. Life cycles. Habitat and Ecology. Clasification: systematic, taxonomy and nomenclature.
2. Microalgae.	Cell organization. Main groups. Reproduction and biological cycles. Systematic and Taxonomy. Ecology and distribution. More representative genus.
3. Macroalgae.	Cell organization. Main groups. Reproduction and biological cycles. Systematic and Taxonomy. Ecology and distribution. More representative genus
4. Vascular plants.	Cell organization. Anatomical and morphological adaptations to the marine environment. Main groups. Reproduction and biological cycles. Systematic and Taxonomy. Ecology and distribution. More representative genus
5. Uses and applications of marine flora	Traditional uses, Food and agriculture. Industrial uses. Potential Uses: Algae aquaculture, algae as bioindicators. Production of energy convertible biomass, wastewater treatment.
6. Harmful effects of the marine flora.	Invasive species. Harmful Algal Blooms (HAB).

Organization of the practical activities:

	Content	Place	Hours
PR1.	Practice 1. Levels of organization of plant species	Laboratory	2,00
PR2.	Practice 2. Departure by boat. Collection of phytoplankton organisms	Boat	2,00
PR3.	Practice 3. Recognition of phytoplanktonic organisms	Laboratory	2,00
PR4.	Practice 4. Study of the most representative genera of algae Pardas in the Mediterranean.	Laboratory	2,00
PR5.	Practice 5. Study of the most representative genera of algae reds in the Mediterranean	Laboratory	2,00
PR6.	Practice 6. Study of the most representative genera of algae Greens in the Mediterranean.	Laboratory	2,00
PR7.	Practice 7. Field trip. Sampling techniques, collection, handling and conservation of algal material.	Field visit	4,00

Temporary organization of learning:

Block of content	Number of sessions	Hours
1. Introduction to Marine Botany	8,00	16,00
2. Microalgae.	8,00	16,00
3. Macroalgae.	8,00	16,00
4. Vascular plants.	2,00	4,00
5. Uses and applications of marine flora	2,00	4,00
6. Harmful effects of the marine flora.	2,00	4,00

References

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