Information about the subject

Degree: Bachelor of Degree in Marine Sciences

Faculty: Faculty of Veterinary Medicine and Experimental Sciences

Code: 271102 **Name:** Biology

Credits: 6,00 **ECTS Year:** 1 **Semester:** 1

Module: Fundamental Science

Subject Matter: Biology **Type:** Basic Formation

Field of knowledge: Sciences

Department: Basic and Cross-disciplinary Sciences

Type of learning: Classroom-based learning

Languages in which it is taught: Spanish

Lecturer/-s:

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Module organization

Fundamental Science

Subject Matter	ECTS	Subject	ECTS	Year/semester
Physics	12,00	Fluid Mechanics	6,00	1/2
		Physics	6,00	1/1
Mathematics	6,00	Mathematics	6,00	1/1
Chemistry	12,00	Chemistry	6,00	1/1
		Chemistry of Aqueous Solutions	6,00	1/2
Biology	12,00	Biochemistry	6,00	1/2
		Biology	6,00	1/1
Geology	6,00	Geology	6,00	1/2

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 main disciplines integrating the life sciences, their foundations, and fields of work.
R2	The student distinguishes the different levels of organization of living beings.
R3	The student uses different working techniques in the laboratory, understanding the planning, development and purpose of the experiment.
R4	The student knows and uses basic techniques for the collection of organisms in coastal sampling.
R5	The student applies the general knowledge of biology: marine biology case.
R6	The student extracts qualitative information on biotic and abiotic factors from Mediterranean marine ecosystems.
R7	The student seeks bibliographical information from different sources and can analyse it with a critical and constructive spirit.
R8	The student is able to produce documents on biology and can work in teams.
R9	The student argues with rational criteria from his/her work.
R10	The student is able to draft an intelligible and well-organized text on different aspects of biological sciences.

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
CB1	Students acquire and understand knowledge in their field of study based on general secondary education but usually reaching a level that, although supported on advanced text books, also includes aspects involving state-of-the-art knowledge specific to their area.				x
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	
CG9	Interpersonal skills	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		

SPECIFIC		Weighting			
		1	2	3	4
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	

Assessment system for the acquisition of competencies and grading system

Assessed learning outcomes	Granted percentage	Assessment method
R1, R2, R3, R9, R10	40,00%	Written test with theoretical and practical questions
R3, R4, R5, R6, R7, R8, R10	20,00%	Delivery of guided assignments, whose objectives and contents will be proposed by the teacher
R2, R3	20,00%	Laboratory test
R3, R4, R5, R6, R9	20,00%	Oral presentation

Observations

According to the general evaluation and qualification regulations, the preferred evaluation system will be by means of continuous evaluation. This subject cannot be assessed by means of a single assessment. Attendance to the practicals is compulsory.

The Course Guide is complemented with the attached document on UCVNet including the Teaching Units. This document specifies the continuous evaluation activities to be carried out in each session of the chronogram. All of them will be evaluated in the sections 'Delivery of guided assignments or Oral presentations' as explained in the document of the didactic units. These two sections have a weight of 40% of the final grade of the course and it is necessary to obtain 5 points to pass them.

The weighted average necessary to pass the subject will be equal to or greater than 5. It is possible to weight the final grade in the case that in an item is obtained between 4 and 4.99 points, the rest must be at least 5 points.

The use of tools based on artificial intelligence (AI) is subject to the teacher's criteria, 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, R5, R6, R9	37,00	1,48
PRACTICAL CLASSES M2	R4, R5, R6, R8, R9, R10	4,00	0,16
LABORATORY M3	R1, R2, R3, R5, R8, R9	8,00	0,32
SEMINAR M4	R2, R3, R4	3,00	0,12
GROUP PRESENTATION OF ASSIGNMENTS M5	R5, R7, R8, R9, R10	3,00	0,12
TUTORIAL M6	R5, R7, R9, R10	2,00	0,08
ASSESSMENT M8	R1, R2, R3, R4, R5, R6, R7, R8, R9, R10	3,00	0,12
TOTAL		**60,00**	**2,40**

LEARNING ACTIVITIES OF AUTONOMOUS WORK

	LEARNING OUTCOMES	HOURS	ECTS
GROUP WORK M9	R3, R4, R5, R6, R8, R9, R10	20,00	0,80
INDEPENDENT WORK M10	R1, R2, R5, R6, R7, R9, R10	70,00	2,80
TOTAL		**90,00**	**3,60**

Description of the contents

Description of the necessary contents to acquire the learning outcomes.

Theoretical contents:

Content block	Contents
UNIT 1. Introduction to bioloogy	Basic concepts. Historical outline. Branches of biology.
UNIT 2. Marine Biology	Basic concepts. Pelagic system: zonation and classification of organisms. Benthic system: zonation and classification of organisms. Aquatic environment.
UNIT 3. Biochemistry	Chemical composition of cells: water, ions and dissolved gases. Organic compounds: carbohydrates, lipids, proteins and nucleic acids.
UNIT 4. The cell	Cell theory. Types of cells: Prokaryotes and eukaryotes. Cell organization: cellular organelles. Biological membranes.
UNIT 5. Cell physiology	Transport. Intercellular union. Metabolic processes. Cell cycle and reproduction.
UNIT 6. Multicellular organization	Tissues, organs and systems: homeostasis.
UNIT 7. Diversity of life	The five kingdoms. Introduction to the systematics and taxonomy of marine organisms.
UNIT 8. Ecology	Ecosystems. Populations and Communities. Demography. Inter and intra-specific relationships. Diversity. Spatial structure Succession. Food web. Energy flows and matter cycles. Holism and reductionism. Biosphere and Gaia.
UNIT 9. Genetics	Organization, duplication, transmission, expression, regulation and change of genetic information. Genes and development.
UNIT 10. Evolution	Macro- and microevolution. Theories of evolution. Speciation. Evolutionary history of life on Earth.

Organization of the practical activities:

	Content	Place	Hours
PR1.	Processing of soft bottoms biological samples	Laboratory	2,00
PR2.	Marine Biological Lab: basic microscopy techniques	Laboratory	2,00
PR3.	Animal tissues	Laboratory	2,00
PR4.	Diversity of organisms in coastal waters I	Laboratory	2,00
PR5.	Diversity of organisms in coastal waters II	Laboratory	2,00
PR6.	Sampling of marine organisms	Boat	2,00
PR7.	Study of Supra, meso-and upper infralittoral rocky shore areas.	Marine station	2,00
PR8.	Mediterranean Benthic organisms: Biodiversity	Marine station	2,00

Temporary organization of learning:

Block of content	Number of sessions	Hours
UNIT 1. Introduction to bioloogy	2,00	4,00
UNIT 2. Marine Biology	5,00	10,00
UNIT 3. Biochemistry	2,00	4,00
UNIT 4. The cell	3,00	6,00
UNIT 5. Cell physiology	2,00	4,00
UNIT 6. Multicellular organization	3,00	6,00
UNIT 7. Diversity of life	5,00	10,00
UNIT 8. Ecology	3,00	6,00
UNIT 9. Genetics	3,00	6,00
UNIT 10. Evolution	2,00	4,00

References

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