

**COURSE DATA****Data Subject**

<b>Code</b>	43252
<b>Name</b>	Diversity, organization and functioning of marine ecosystems
<b>Cycle</b>	Master's degree
<b>ECTS Credits</b>	3.0
<b>Academic year</b>	2021 - 2022

**Study (s)**

<b>Degree</b>	<b>Center</b>	<b>Acad. Period</b>	<b>year</b>
2148 - Master's degree in Biodiversity: Conservation and Evolution	Faculty of Biological Sciences	1	Second term

**Subject-matter**

<b>Degree</b>	<b>Subject-matter</b>	<b>Character</b>
2148 - Master's degree in Biodiversity: Conservation and Evolution	5 - Cross-disciplinary optional subject areas 1	Optional

**Coordination**

<b>Name</b>	<b>Department</b>
PEÑA CANTERO, ALVARO LUIS	355 - Zoology

**SUMMARY**

In this course the different marine ecosystems are presented under the perspective of their floristic-fauna composition, their organization and their functioning with respect to the flows of matter and energy among their components. It is structured in three different parts. The first part serves to introduce the marine environment and its main divisions. The other two parts are devoted to the study of the pelagic and benthic domain, its fundamental characteristics, the organisms that inhabit them and their main communities, always highlighting the continuous relationships between both divisions, which are essential for the understanding of the manifestations of life in the oceans.



## PREVIOUS KNOWLEDGE

### Relationship to other subjects of the same degree

There are no specified enrollment restrictions with other subjects of the curriculum.

### Other requirements

N o n e .

## COMPETENCES (RD 1393/2007) // LEARNING OUTCOMES (RD 822/2021)

### 2148 - Master's degree in Biodiversity: Conservation and Evolution

- Students should apply acquired knowledge to solve problems in unfamiliar contexts within their field of study, including multidisciplinary scenarios.
- Students should communicate conclusions and underlying knowledge clearly and unambiguously to both specialized and non-specialized audiences.
- Students should demonstrate self-directed learning skills for continued academic growth.
- To acquire basic skills to develop laboratory work in biomedical research.
- Be able to access the information required (databases, scientific articles, etc.) and to interpret and use it sensibly.
- Stimulate the capacity for critical reasoning and for argumentation based on rational criteria.
- Favour intellectual curiosity and encourage responsibility for one's own learning.

## LEARNING OUTCOMES (RD 1393/2007) // NO CONTENT (RD 822/2021)

To get the ability to:

- Demonstrate an integrated vision of the subject, enabling the knowledge acquired to be interrelated and applied.
- Show a correct handling of the terminology used.
- Develop skills for using the sources of scientific information.
- Retrieve, analyse and synthesise scientific information.
- Present and disseminate scientific information.
- Work in group when faced with problematic situations.
- Elaborate comprehensible and well-organised written texts.



- Make a public oral presentations in a clear and coherent manner, encouraging communication and discussion of contents.
- Obtain relevant information to face new scientific challenges.
- Apply critical thinking.
- Acquire interpersonal skills, responsibility, autonomy, teamwork, decision-making and entrepreneurial spirit.

## DESCRIPTION OF CONTENTS

### 1. Introduction to the marine environment

Main characteristics of the oceans. Zonation and characteristics of the pelagos and benthos.

### 2. The pelagic domain

Main components of marine phytoplankton and zooplankton. Meroplankton. Nekton. Primary productivity in the water column and factors determining it. General production models. Productivity in different marine environments. Pelagic food webs.

### 3. The benthic domain

Characterisation of the benthic environment. Zonation models. Main benthic ecosystems. Deep benthos. Deep Sea food sources. Singular communities.

## WORKLOAD

ACTIVITY	Hours	% To be attended
Laboratory practices	20,00	100
Theory classes	10,00	100
Development of group work	20,00	0
Study and independent work	25,00	0
<b>TOTAL</b>	<b>75,00</b>	

## TEACHING METHODOLOGY



The theoretical classes will be developed following the model of a master class, since it is the model that allows to emphasize the most essential of each subject and to control the appropriate development of the subject.

Seminars, which are compulsory, will be prepared by the students on topics proposed by the teacher in order to go deeper into topics of special interest. Students will prepare oral presentations on these topics, which will be presented in class and handed in for assessment.

The practical activities of the course include field trips to study marine communities in situ and their sampling for subsequent study in the laboratory. Attendance to the practical activities will be compulsory, as well as the presentation of a report on them.

Tutorials will be held to solve the questions and doubts raised by the students with respect to the topics explained.

All the activities will be managed through the University of Valencia's Virtual Classroom platform, which will also serve as a means of communication.

## EVALUATION

The evaluation will cover two aspects. On the one hand, the seminar and its presentation in class will be marked with a maximum of 8 points. In the evaluation of the practical part of the course, which will represent up to 2 points of the final grade, the student's attendance to the field trips, his/her participation and a report on the practical activities carried out will be taken into account.

## REFERENCES

### Basic

- Castro, P., Huber, M.E. (2016) Marine Biology. McGraw-Hill Education.
- Herring, P. (2002) The Biology of the Deep Ocean. Oxford University Press.
- Levinton, J.S. (2009). Marine Biology. Function, biodiversity, ecology. Oxford University Press.
- Nybakken, K.J. (1983). Marine Biology: an ecological approach. Wiley. Chichester.
- Margalef, R. (1989). El Mediterráneo Occidental. Ediciones Omega, Barcelona. 374 pp.
- Pérès, J.M. (1967). The Mediterranean Benthos. Oceanogr. Mar. Biol. Ann. Rev. 5: 449-533.

## ADDENDUM COVID-19



**This addendum will only be activated if the health situation requires so and with the prior agreement of the Governing Council**

## **1. Contenidos**

Se mantienen los contenidos inicialmente recogidos en la guía docente.

Toda la parte teórica de la asignatura, incluyendo su evaluación, se realizó antes de la suspensión de las actividades presenciales.

En relación a las prácticas, que se mantienen, se desarrollan de forma no presencial.

## **2. Volumen de trabajo y planificación temporal de la docencia**

Mantenimiento del peso de las distintas actividades que suman las horas de dedicación en créditos ECTS marcadas en la guía docente original.

No se mantienen los horarios, se ha dado libertad a los estudiantes para realizar las actividades programadas de acuerdo con su propia programación.

## **3. Metodología docente**

Subida de materiales al Aula virtual

Propuesta de actividades por Aula virtual

Resolución de problemas relacionados con las prácticas.

## **4. Evaluación**

Se mantiene el sistema de evaluación inicialmente recogido en la guía docente.

Como se ha indicado anteriormente, toda la parte teórica de la asignatura ha sido ya evaluada, y además superada. Únicamente queda la parte práctica, donde se valorará la resolución de los problemas propuestos.

## **5. Bibliografía**

La bibliografía recomendada se mantiene pues es accesible.