COURSE DATA

Data Subject	
Code	33060
Name	Marine biology
Cycle	Grade
ECTS Credits	5.0
Academic year	2018 - 2019

Study (s)

Degree	Center	Acad. year	Period
1100 - Degree in Biology	Faculty of Biological Sciences	4	Annual

Subject-matter

Degree	Subject-matter	Character
1100 - Degree in Biology	15 - Complements of biodiversity and conservation	Optional

Coordination

Name	Department
PEÑA CANTERO, ALVARO LUIS	355 - Zoology

SUMMARY

The subject Marine Biology, with 5 credits ECTS, forms part of the Academic Pathway **Additions to Biodiversity and Conservation** of the 4th year of the degree in Biology.

Marine Biology provides an introduction to the study of life in the oceans. It begins with the study of the major differences with the terrestrial environment and the main divisions of the oceans. It continues with the study of the main physical and chemical characteristics of the oceans. Next, it reviews the pelagic domain, its characteristics and main divisions, organisms inhabiting these ecosystems and key processes occurring in them. Finally, it goes on with the study of the benthic domain, again studying its principal characteristics and divisions, organisms and processes that characterize the ecosystems linked to the seabed.

PREVIOUS KNOWLEDGE

Relationship to other subjects of the same degree

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

Other requirements

OUTCOMES

1100 - Degree in Biology

- Conocer la diversidad de los seres vivos.
- Conocer la diversidad de los ecosistemas.
- Conocer las adaptaciones funcionales al medio.
- Conocer las interacciones entre especies.
- Conocer los flujos de energía y ciclos biogeoquímicos en los ecosistemas.
- Comprender las características distintivas y problemática del medio marino.
- Caracterizar las comunidades del medio marino.

LEARNING OUTCOMES

- Understand and correctly apply scientific concepts and terminology used in the field of Marine Biology.
- Understand the distinctive characteristics and problems of the marine environment.
- Recognize and identify the most common flora and fauna of the Mediterranean coast.
- Identify the main functional adaptations of marine organisms in the pelagic and benthic environments.
- Recognize the structure, performance and basic dynamics of benthic and pelagic communities.
- Design and carry out sampling of representative communities and ecosystems of the Mediterranean sea.

DESCRIPTION OF CONTENTS

1. Introduction and overview

Item 1. Development of Marine Biology. Terrestrial vs. marine ecosystems. Major subdivisions of the marine environment.

2. Physical and chemical characteristics of the oceans

Item 2. Water: composition and properties. Sea water: general composition and major constituents. Salinity. Temperature. Density. Dissolved gases. Minor constituents. Nutrients. Solar radiation. Hydrostatic pressure. Movement of water bodies: surface ocean circulation and thermohaline circulation. Waves. Tides.

3. The pelagic environment

Item 3. Epipelagic. Plankton and Nekton: biodiversity. Vertical migrations. Epipelagic food webs. Production patterns.

Item 4. The deep-sea pelagic environment. Food sources. Mesopelagic: biodiversity. Migratory and non-migratory. Deep scattering layer. Adaptations. Deep Sea: environmental characteristics. Adaptations.

4. The benthic environment

Item 5. Intertidal. Hard substrates. Environmental factors. Vertical zonation. Causes of zonation: physical and biological factors. Soft substrates. Environmental factors and zonation.

Item 6. Estuaries. Origin and types. Circulation and sedimentation. Physical characteristics. Biology of estuaries. Estuarine communities.

Item 7. Subtidal. Physical characteristics. Communities of soft substrata. Communities of hard substrata. Deep-sea benthos.

WORKLOAD

ACTIVITY	Hours	% To be attended
Theory classes	25,50	100
Laboratory practices	22,00	100
Tutorials	2,50	100
Study and independent work	75,00	0
TOTAL	**125,00**	

TEACHING METHODOLOGY

The course will be conducted through the following activities:
- Theoretical classes in which the most important contents of each issue are identified and exposed.
- Practical classes, made in the form of field trips (if possible) and laboratory sessions. Sampling and field data collection are first carried out and then processed and analyzed in the laboratory. The practical sessions are carried out during the second term.
- Seminars.

EVALUATION

The evaluation of the course will be conducted through the following mechanisms. There will be a written test, which represents 70% of the final mark, with the aim of assessing the assimilation and understanding of the theoretical content of the course. In assessing the knowledge acquired in the practical part, which represent up to 20% of the final mark, it will be taken into account attendance and compliance with the objectives of each field trip and laboratory session, through forms and workbook. Finally, we will evaluate the seminar and class presentation with up to 10%. It must be obtained at least five out of ten in the theory exam and 50% of the total to pass the course. The second call will be reserved for students who have not passed the theoretical or want up the mark.

To request the advancement of the subject call, students must have completed the compulsory activities indicated in the course guide.

REFERENCES

Basic

- Castro, P., Huber, M.E. (2007) Biología Marina. McGraw-Hill Interamericana.
- Cognetti, G.; Sarà, M.; Magazzù, G. (2001) Biología Marina. Ariel Ciencia. Barcelona.
- Levinton, J.S. (2009). Marine Biology. Function, biodiversity, ecology. Oxford University Press.
- Nybakken, K.J. (1983). Marine Biology: an ecological approach. Wiley. Chichester.