

Syllabus

Subject

Subject / Group	11670 - Coastal Ecology. Coastal Systems / 1
Degree	Master's Degree in Marine Ecology
Credits	5
Period	2nd semester
Language of instruction	Spanish

Professors

Lecturers	Office hours for students					
	Starting time	Finishing time	Day	Start date	End date	Office / Building
Nona Sheila Agawin Romualdo nona.agawin@uib.es	You need to book a date with the professor in order to attend a tutoring session.					
	13:00	14:00	Monday	03/09/2018	31/07/2019	4A / Guillem Colom Casasnovas
Pere Ferriol Buñola pere.ferriol@uib.cat	13:00	14:00	Tuesday	03/09/2018	31/07/2019	4A / Guillem Colom Casasnovas
Lluís Gómez Pujol lgomez-pujol@uib.cat	14:00	15:00	Monday	03/09/2018	31/07/2019	Laboratori Geologia

Context

This guide has been prepared following the guidelines established for the subject Litoral Ecology: Coastal systems of the curriculum of the official title of Master in marine ecology of the Universitat de les Illes Balears.

This is an optional semester course within the specific module of the master with which it is intended that the student acquire the knowledge and skills necessary for the correct development of any study that has to be developed following the scientific method.

The subject counts on the teaching assistance of Dr. Iris Hendriks (Mediterranean Institute of Advanced Studies, IMEDEA of the CSIC-UIB).

The subject can be taught entirely or partially in english if the students agree.

Requirements

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Recommended

A general knowledge of general ecology is recommended.

Skills

Specific

- * E3. Distinguish and recognize the components of the planktonic, nectonic and benthic communities, as well as the trophic relationships between them and the aspects related to the global metabolism of marine ecosystems. E5. To be able to evaluate the impacts anthropic in the marine environment: overfishing, pollution, regeneration of beaches, marinas, as well as the effects of the bioaccumulation of pollutants in the marine biota. E6. To have criteria for evaluating with environmental indicators, with the aim of considering management strategies, conservation of species and regression habitats. .

Generic

- * G1. To give the student a vision of the functioning of marine ecosystems, their biological characteristics and the issues related to the management of living resources, coastal uses and the anthropic impacts to which they are subjected. G3. To raise real cases and solve the problems related to each case, through the development of a project carried out in small groups and individually. G6 develop a critical and self-critical attitude, both in the strictly scientific sense, and in other areas of application of the knowledge. .

Transversal

- * One can consult the basic competencies that the student will have to acquire at the end of the master in the following link: [Http://estudis.uib.cat/es/master/comp_basiques/Basic](http://estudis.uib.cat/es/master/comp_basiques/Basic) .

Basic

- * You may consult the basic competencies students will have to achieve by the end of the Master's degree at the following address: http://estudis.uib.cat/master/comp_basiques/

Content

This course aims to contextualize coastal ecosystems, from the dual perspective of transitional systems between epicontinental ecosystems and the sea, and the compartmentalization of marine coastal systems in relation to oceanic ecosystems. All this from a theoretical point of view, description of the communities and the processes linked to them, as well as applied aspects, taking into account the impacts that these ecosystems suffer and the theirmanagement and conservation

Range of topics

Theoretical content. Lectures

1. Introduction on the littoral zone: the transition zone between terrestrial and marine ecosystems
2. Different subregions of the littoral zone and the physico-chemical properties that define these subregions:
 - * Supralittoral zone
 - * Eulittoral zone

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- * Sublittoral zone (infralittoral and circalittoral zones)
- 3. Zonation in marine littoral areas: distribution of species and communities along environmental gradients
- * Vertical zonation and main factors (biotic and abiotic) structuring the patterns and ecological processes
- * Horizontal zonation and main factors (biotic and abiotic) structuring the patterns and ecological processes
- 4. Littoral types according to geographical zones and their associated organisms and ecosystems
- * Tropical littoral (Mangroves, Seagrasses, Coral reefs, Sponges etc.)
- * Subtropical littoral (e.g. Mediterranean: Sand dunes, Seagrass (i.e. *Posidonia oceanica*, Sponges, etc.)
- 5. The ecosystem functions of the littoral zone
- 6. The value of the littoral zone to society
- 7. Threats to the littoral zone
- * Climate change and acidification
- * Eutrophication
- * Invasive species
- * Etc.
- 8. Management of marine bio-resources in littoral areas and their preservation
- 9. Research methods in ecology of marine coastal areas.

Practical content. Fieldwork

Fieldwork in a coastal wetland and sampling in a seagrass bed

Teaching methodology

In-class work activities (1.2 credits, 30 hours)

Modality	Name	Typ. Grp.	Description	Hours
Theory classes	Theoretical lectures	Large group (G)	From the lectures given by the professor, using the board or through digital presentations, the essential concepts which constitute the basis of the Coastal Ecology: Coastal Systems will be explained. During the theoretical sessions dialogue with the students about problematic issues and any doubts in general are encouraged.	25.5
Practical classes	Fieldwork	Medium group (M)	Observational techniques of ecosystems in situ of the different types of sampling in coastal aquatic communities and laboratory work using biological analysis techniques on the material collected in the field. The students will learn the methodology to determine the state of conservation of the seagrass <i>Posidonia oceanica</i> in a site of the Balearic coast.	4.5
Assessment	Exam	Large group (G)	Solving problems and exercises in a 2 hr exam session.	0

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At the beginning of the semester a schedule of the subject will be made available to students through the UIBdigital platform. The schedule shall at least include the dates when the continuing assessment tests will be conducted and the hand-in dates for the assignments. In addition, the lecturer shall inform students as to whether the subject work plan will be carried out through the schedule or through another way included in the Aula Digital platform.

Distance education tasks (3.8 credits, 95 hours)

Modality	Name	Description	Hours
Group or individual self-study	Work on the concepts and techniques explained in the theoretical and practical part of the course	<ul style="list-style-type: none"> * Understanding of theoretical concepts * Resolution of problems and exercises. * Analysis of results. * Development of reports 	95

Specific risks and protective measures

The risks are those associated with normal field and laboratory work. In both cases, the security measures proposed by the UIB's prevention service are taken into account.

Student learning assessment

Frau en elements d'avaluació

In accordance with article 33 of Academic regulations, "regardless of the disciplinary procedure that may be followed against the offending student, the demonstrably fraudulent performance of any of the evaluation elements included in the teaching guides of the subjects will lead, at the discretion of the teacher, a undervaluation in the qualification that may involve the qualification of "suspense 0" in the annual evaluation of the subject".

Theoretical lectures

Modality	Theory classes
Technique	Observation techniques (non-retrievable)
Description	From the lectures given by the professor, using the board or through digital presentations, the essential concepts which constitute the basis of the Coastal Ecology: Coastal Systems will be explained. During the theoretical sessions dialogue with the students about problematic issues and any doubts in general are encouraged.
Assessment criteria	Participation in the classes

Final grade percentage: 15%with a minimum grade of 5

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Fieldwork

Modality	Practical classes
Technique	Student internship dissertation (non-retrievable)
Description	Observational techniques of ecosystems in situ of the different types of sampling in coastal aquatic communities and laboratory work using biological analysis techniques on the material collected in the field. The students will learn the methodology to determine the state of conservation of the seagrass <i>Posidonia oceanica</i> in a site of the Balearic coast.
Assessment criteria	* Attendance in the planned practical activities * Structure and content of the practical report and the bibliographic search

Final grade percentage: 35%with a minimum grade of 5

Exam

Modality	Assessment
Technique	Short-answer tests (retrievable)
Description	Solving problems and exercises in a 2 hr exam session.
Assessment criteria	The final examination of the subject consist of the different themes that have been explained during the course. The questions maybe a synthesis of all the themes and will include both the theoretical and practical content.

Final grade percentage: 50%with a minimum grade of 5

Resources, bibliography and additional documentation

Basic bibliography

Mann, K.H. (2000).-Ecology of Coastal Waters. With Implications for Management. Wiley.
Valiela, I. (2008).-Global Coastal Change. Blackwell.
Enciclopedia Catalana (1994).- Biosfera. 10 Litorals i oceans. Generalitat de Catalunya

Complementary bibliography

Duarte C.M. (edit) (2009).- Global Loss of Coastal Habitats. Fundación BBVA. CSIC.
Jorgensen B.B. and Richardson K. (edits.) (1996).- Eutrophication in Coastal Marine Ecosystems.American Geophysical Union.
Ocaña, A.; Sánchez Castillo, P.M. (edits) (2006).- Conservación de la biodiversidad y explotación sostenible del medio marino. Centro Mediterráneo. Universidad de Granada.
Ros Joandomènec (2001).- Vora el mar broix. Problemàtica ambiental del litoral mediterrani. Biblioteca Universal Empuries.
Terradas, J; Escarré, A.; Margalef, R. (coord.) (1989).-Sistemes Naturals. Història Natural dels Països Catalans, 14. Enciclopèdia Catalana. Barcelona.