

Analysis and Management of Natural Landscapes

2015/2016

Code: 43054

ECTS Credits: 6

Degree	Type	Year	Semester
4313784 Interdisciplinary Studies in Environmental, Economic and Social Sustainability	OT	0	1

Contact

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Use of languages

Principal working language: spanish (spa)

Teachers

Carles Barriocanal

Sonia Sánchez Mateo

Roser Maneja Zaragoza

External teachers

Salvador Carranza

Prerequisites

Students must have knowledge in environmental sciences and ability to follow classes

Objectives and Contextualisation

The landscape as an expression of natural and social history.

Structure and Dynamics of the major biomes, sociological dimension.

Methodology approach to understanding and analyzing examples in Latin America, Europe and Mediterranean region.

The module provides a historical perspective on the conservation origins and Natural Protected Areas (NPA), as well as the existing legislative figures of protection.

NPA management tools and biodiversity monitoring and conservation (in-situ, ex-situ) in the context of global change and its socioecological implications are studied.

Criteria and analytical and legal tools for diagnosis, assessment of environmental services and NPA management, particularly in the case of Biosphere Reserves and Urban biodiversity (the city as a socioecosystem) will be reviewed.

Main strategies for environmental education and communication, participation and community conservation processes involving NPA, will be studied from different case studies.

Skills

- Analyse how the Earth functions on a global scale in order to understand and interpret environmental changes on the global and local scales.
- Apply knowledge of environmental engineering to purification and decontamination in different environments
- Communicate and justify conclusions clearly and unambiguously to both specialised and non-specialised audiences.
- Integrate knowledge and use it to make judgements in complex situations, with incomplete information, while keeping in mind social and ethical responsibilities.
- Seek out information in the scientific literature using appropriate channels, and use this information to formulate and contextualise research in environmental sciences.
- Solve problems in new or little-known situations within broader (or multidisciplinary) contexts related to the field of study.
- Use acquired knowledge as a basis for originality in the application of ideas, often in a research context.
- Work in an international, multidisciplinary context.

Learning outcomes

1. Apply knowledge of microorganisms' role in biodegradation processes and as bioindicators, and their potential in the implementation of clean technologies.
2. Assess human impact on coastal areas and the function of marine nature reserves, both coastal and oceanic, in biodiversity conservation and the capacity to generate biomass.
3. Communicate and justify conclusions clearly and unambiguously to both specialised and non-specialised audiences.
4. Develop and apply the knowledge and skills acquired in real cases.
5. Differentiate between biodegradation, degradation, mineralisation and other related concepts.
6. Identify the factors that determine the effectiveness of a biodegradation process.
7. Integrate knowledge and use it to make judgements in complex situations, with incomplete information, while keeping in mind social and ethical responsibilities.
8. Interpret current models for protected natural areas with local and worldwide cases, both marine and terrestrial.
9. Locate and analyse the great biogeographical regions and their situation regarding the conservation of biodiversity.
10. Propose the most suitable biodegradation strategy for the type of contaminant and the stage(s) it is at.
11. Seek out information in the scientific literature using appropriate channels, and use this information to formulate and contextualise research in environmental sciences.
12. Solve problems in new or little-known situations within broader (or multidisciplinary) contexts related to the field of study.
13. Summarise and interpret, in a logically-reasoned way, the information from studies on biodegradability or molecular biology.
14. Use acquired knowledge as a basis for originality in the application of ideas, often in a research context.
15. Work in an international, multidisciplinary context.

Content

1. Historical Origins of Conservation and Protected Natural Areas (PNA)
2. The landscape as an hybrid expression of nature and culture. Characterization of the main effects on landscape at a global and local scale.
3. Some examples from Antarctica to the Mediterranean.
4. Natural Protected Areas and forms of protection. Characterization and management models.
 - 4.1. Natural parks

- 4.2. National parks
- 4.3. Biosphere Reserves
5. Forests and biodiversity. Characterization and management.
6. Assessment strategies of NPA. The case of Biosphere Reserves
7. Socioecological analysis of global change in NPA.
8. Case study: monitoring of socioecological indicators in Mediterranean river basins
9. Evaluation of environmental services
10. Participation, Environmental education, communication and community conservation
11. Ex-situ conservation. The cases of the Montseny newt (*Calotriton arnoldi*) and ferreret (*Alytes muletensis*)
12. Tourism in NPA
13. Field trip

Methodology

Lectures

Troubleshooting classes / cases / exercises

Classroom practices

Active participation in the classroom

Field trip

Essays/works

Activities

Title	Hours	ECTS	Learning outcomes
Type: Directed			
Theoretical presentations	30	1.2	10, 3
Type: Supervised			
Essays oral presentations	20	0.8	4, 6, 3, 7
Type: Autonomous			
Essays/works preparation	40	1.6	1, 11, 3
Lectures	40	1.6	5, 7

Evaluation

The final mark will be the result of the assistance and active participation in class (20%), the delivery of essays/works (40%) and oral presentations (40%).

Evaluation activities

Title	Weighting	Hours	ECTS	Learning outcomes
Active participation in the classroom	20%	4	0.16	11, 12, 3, 7, 13
Essays oral presentations	40%	2	0.08	11, 4, 8, 12, 3, 7, 9, 14, 15, 2
Essays/works delivery	40%	14	0.56	11, 4, 8, 12, 3, 7, 9, 14, 15

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