UC | Universidad de Cantabria

STUDY GUIDE

Nature-Based Solutions as Proactive Approaches to Conservation

Organised by

University of Cantabria (UC)

Originally developed in the context of

Creative Commons education materials created by the TRASMARES ERASMUS+ project (2019-1-ES01-KA203-065536, “Specialized training on applied tools for sustainable marine ecosystems”), coordinated by the University of Cantabria (UC)

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1. IDENTIFYING DATA	
Course Name.	Nature-Based Solutions as Proactive Approaches to Conservation
Coordinating University.	University of Cantabria (UC)
Course Field(s).	Sustainability
Related Study Programme.	Course included in the University Microcredential in Sustainable Marine Ecosystems (TRASMARES)
ISCED Code.	051101. Biology 053201. Marine sciences 071201. Environmental engineering 073202. Civil engineering
Sustainable Development Goals	SDG 04. Quality education SDG 13. Climate action SDG 14. Life below water
Study Level.	MECU 7 (Master or 240 ECTS Degree)
Number of ECTS credits allocated.	2 ECTS
Mode of Delivery.	Online self-study
Language of Instruction.	English, with subtitles in Spanish, Italian and Portuguese
Course Dates.	03.10. 2025 – 19.12.2025
Schedule of the course.	The course can be attended from October until mid-December 2025 at any time. Course materials and assessment forms are fully online and can be checked at any point. Lectures are asynchronous and can be reviewed at any time
Key Words.	Grey infrastructures, NbS, coastal restoration, sustainable management, urban ocean fronts
Motivational Phrase.	Nature may provide sustainable solutions to address the important development challenges of coastal societies in a climate change scenario.
Prerequisites and co-requisites.	No previous requirements established
Number of EUNICE students that can attend the Course.	Unlimited
Course inscription procedure(s).	Requires registration on the TRASMARES University Microcredential: https://web.unican.es/estudios/estudios-propios/informacion-estudios-propios-de-posgrado/detalle-estudios-propios?e=1116 .

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2. CONTACT DETAILS	
Department.	Environmental Hydraulics Institute (IHCantabria)
Name of Lecturer.	• Prof. José A Juanes (Coordinator) • Prof. María Maza (Director)
E-mail.	mazame@unican.es
Other Lecturers.	Academic staff from UC-IHCantabria: • Dr. Bárbara Ondiviela • Dr. Cristina Galván • Dr. Elvira Ramos • Dr. Inés Mazarrasa • Dr. Mario Álvarez International advisors from TRASMARES project: • Prof. Laura Airoldi (University of Padova) • Dr. Joao Neto (University of Coimbra) External contributors of CC materials from the TRASMARES project: • Dr. Jaime Ramos (University of Coimbra) • Dr. Victor Paiva (University of Coimbra) • Dr. Joanne Wong (freelance environmental consultant)

3. COURSE CONTENT

Teaching materials of this MOOC were co-created, under creative commons licence, in the TRASMARES project "Specialized training on applied tools for sustainable marine ecosystems", funded by the EU ERASMUS+ programme (2019-1-ES01-KA203-065536, 2019-22) and developed through the collaboration of academics and researchers from the Environmental Hydraulics Institute of the University of Cantabria, coordinator of the project, the University of Bologna and the University of Coimbra.

This course introduces, first, the concept of Nature Based Solutions (NbS), from the point of view of sustainable management of marine ecosystems and resources. Then, it introduces the key concepts of conservation at different scales, from species to ecosystems, and explore how these concepts relate to NbS. Base on those concepts, the course examines a wide range of NbS, from the restoration of natural habitats to the naturalisation of urban marine infrastructure (grey infrastructure), through real-world case studies. Finally, the course looks at how society can incentivise, finance and govern NbS. Students will therefore gain a solid understanding of what an

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NbS is or is not, and will gain a broad knowledge of the most innovative solutions being developed and employed in marine and coastal conservation.

4. LEARNING OUTCOMES

- Students will learn the concept of 'Nature-based Solutions (NbS)' with real-world marine and coastal examples.
- Students will explore the intersection between NbS and more traditional conservation practices and concepts.
- Students will know the scientific, socioeconomic and political factors that facilitate the adoption of NbS.

5. OBJECTIVES

This course aims at debating about the technical, environmental and socioeconomic suitability of traditional coastal protection actions versus the new introduced Nature based Solutions (NbS), as sustainable conservation and restoration practices.

6. COURSE ORGANISATION

UNITS

1.	Introduction to the sustainable management of marine ecosystems and resources
2.	From species to ecosystem conservation
3.	Habitat restoration and its value in Nature-based Solutions
4.	The greening of man-made structures to support nature in the urban ocean
5.	Incentivising, financing and governing Nature-based Solutions

LEARNING RESOURCES AND TOOLS

The learning resources and assessment tools of the course are available at the UC Moodle platform.

PLANNED LEARNING ACTIVITIES AND TEACHING METHODS

Students will have access to video materials, written course contents, and automatic online evaluation tests in Moodle online environment. Students can review the materials and do the assessments at their own pace during the period of course delivery since. The course is asynchronous and can be reviewed at any time. Students' activity in Moodle is expected to consist of the following:

- Watching the video materials available on the course site.
- Reading and familiarisation with the text materials available on the course site.
- Taking the evaluation tests that measure students' knowledge and skills in content areas.

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The course is completed by independently working and by taking the exams which consists of multiple-choice questions covering the course topics. The course is graded “passed” or “failed”.

As an additional optional activity, each sub-topic will have a forum for students to share their questions, discussions or doubts. It will be moderated by the professors when necessary. All students are free to participate and post their queries.

7. ASSESSMENT METHODS, CRITERIA AND PERIOD

To complete the course, you must:

- View the materials in each Module, going through all Sub-Topics.
- Correctly answer at least 50% of each of the Automatic Online Assessments.
- Complete the post-survey of the course.

OBSERVATIONS

8. BIBLIOGRAPHY AND TEACHING MATERIALS

Teaching materials are available on the course at the dedicated Moodle platform. Literature recommendations are also outlined in the course contents.

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