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EUROPEAN UNIVERSITY FOR CUSTOMISED EDUCATION

STUDY GUIDE

Human Activities and Vulnerability of Marine Ecosystems

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).

Organised by

University of Cantabria (UC)

1. IDENTIFYING DATA.	
· Course Name.	Human Activities and Vulnerability of Marine Ecosystems.
· Coordinating University.	University of Cantabria (UC).
· Partner Universities Involved.	-
· Course Field(s).	Sustainability
· Related Study Programme.	Transdisciplinary course, open to students from any study programme.
· ISCED Code.	051101. Biology 053201. Marine sciences 071201. Environmental engineering 073202. Civil engineering
· SDG.	SDG 04. Quality education SDG 13. Climate action SDG 14. Life below water
· Study Level.	MECU 7 (Master or 240 ECTS Degree)
· EUNICE Key Competencies	Problem solving: Strongly Teamworking: NOT AT ALL Communication: NOT AT ALL Self-management: Strongly Cognitive flexibility: NOT AT ALL Digital competence: NOT AT ALL Technical competence: Strongly Global intercultural competence: Moderately

· 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 (October 3rd, 2025 – December 19th,2025).
· Precise Schedule of the Lectures.	The course can be attended from the beginning of October until the mid of 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.	Socio-ecological systems, DPSIR, drivers, pressures, responses, impacts, ecological status, management actions

· Catchy Phrase.	Biodiversity is the foundation of ecosystem services to which human well-being is intimately linked, including both natural and managed ecosystems.

· Prerequisites and co-requisites.	No previous requirements established.
· Number of EUNICE students that can attend the Course.	Unlimited.
· Course inscription procedure(s).	Course inscription through the EUNICE MOOC platform available here. The course is free of charge.

2. CONTACT DETAILS.	
· Department.	Environmental Hydraulics Institute (IHCantabria).
· Name of Lecturer.	Prof. José A Juanes (Coordinator), Dr. María Recio (Director)
· E-mail.	reciom@unican.es
· Other Lecturers.	Academic staff from UC-IHCantabria: • Prof. Araceli Puente (UC) • Dr. Bárbara Ondiviela • Dr. Cristina Galván • Dr. Elvira Ramos • Dr. Xabier Guinda • MsC. Francisco Royan 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. 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.

The course guides participants through the Ecosystem-Based Approach (EBA) framework to address the management of marine ecosystems, their sustainability and the benefits they bring to society. To do so, it first introduces participants to specialised techniques (DPSIR) to characterise the main human needs, the activities carried out by society to meet them, and the consequences of these actions for the environment and society. Building on that knowledge, the course explains tools to identify strategies to address environmental deficiencies, with the aim of ensuring sustainability and securing sufficient ecosystem benefits.

4. LEARNING OUTCOMES.

- Students will know the main needs of coastal populations.
- Students will analyse the activities developed by society to meet human needs.
- Students will discover the consequences for the environment and for society itself.
- Students will elaborate the possible strategies to reduce environmental damage and improve the benefit to human populations.

5. OBJECTIVES.

This course aims at understanding the components of the DPSIR framework, as a basic management tool for the conceptualisation and assessment of the most relevant problems existing in coastal systems.

6. COURSE ORGANISATION.

UNITS

1.	Introduction to the DPSIR framework.
2.	Driving forces.
3.	Pressures.
4.	Changes of status.
5.	Impacts on the well-being of society.
6.	Response with measures.

LEARNING RESOURCES AND TOOLS.

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

PLANNED LEARNING ACTIVITIES AND TEACHING METHODS.

Students will have access to video materials, written course contents, and automatic online evaluation tests in EUNICE 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 EUNICE 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.

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 UC-EUNICE Office, with input from 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. This will take approximately 3 minutes. We need the data to issue your Certificate (free of charge) and for justification purposes.

Upon fulfillment of the course completion criteria, you will be able to download the Course Certificate directly from EUNICE Moodle platform.

OBSERVATIONS.

8. BIBLIOGRAPHY AND TEACHING MATERIALS.

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