



Built Environment  
leArning for Climate  
AdaptatiON



# Transferring scientific knowledge about coastal ecosystems to lifelong learning initiatives

JA JUANES

IHCantabria, Education & Capacity Building Area

University of  
**HUDDERSFIELD**  
Inspiring global professionals

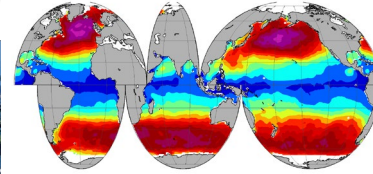
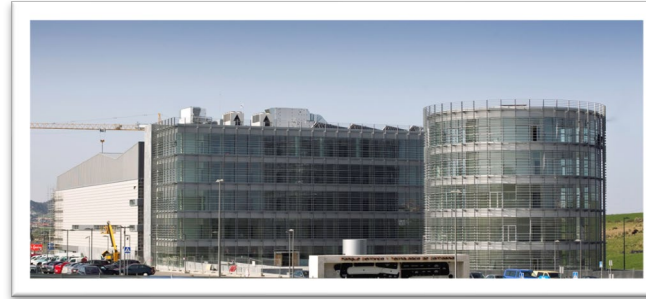


Co-funded by the  
Erasmus+ Programme  
of the European Union

# 1. Challenges



Hydr/Coast  
Engineering



Climate Change /  
Renew. Energies



Hydrobiology -  
Water Manag.



## EHEA

- 2 MSc (ICP-GISH)
- 1 PhD (“IH2O”)
- Erasmus Mundus

## Capacity building

- Professionals & Managers
- Training courses
- Specialized Diplomas

## Water cycle literacy

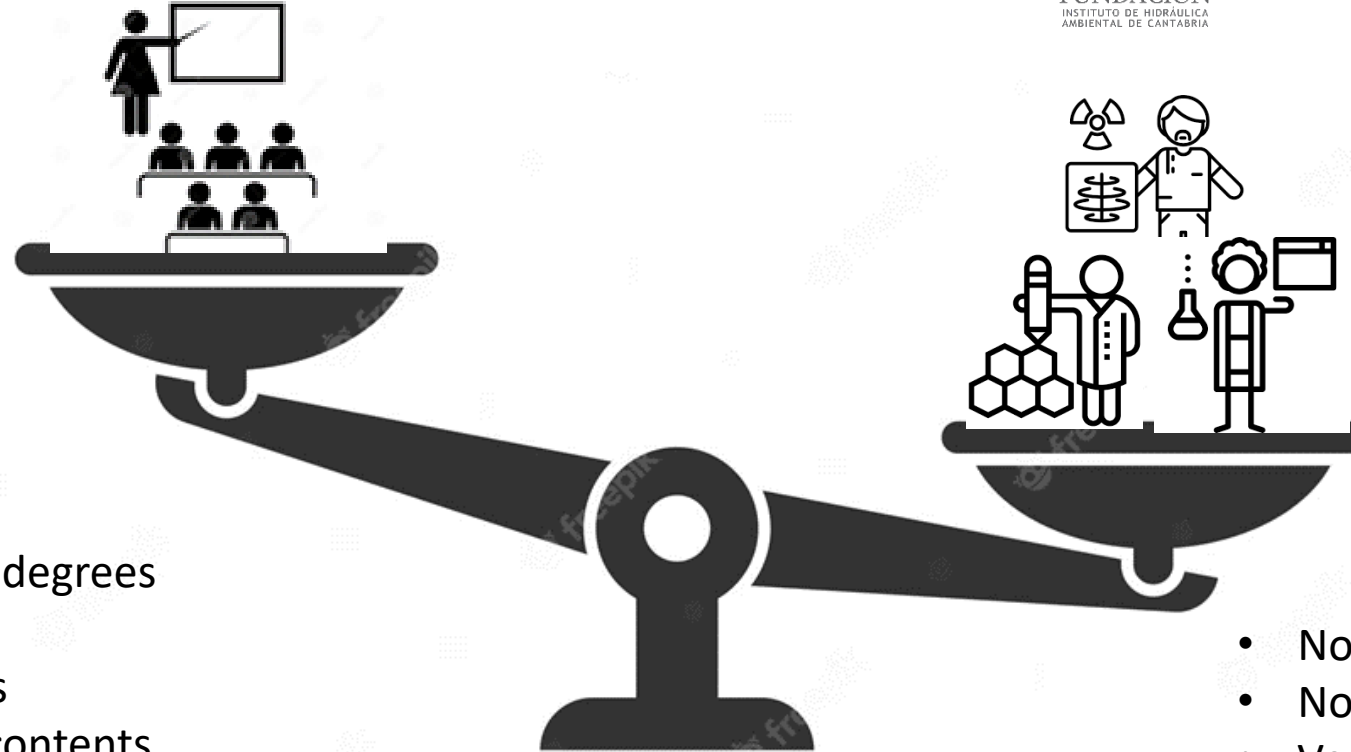
- General Divulagation
- Dissemination
- Internships

**Coordinating and Optimizing the transference of scientific knowledge**

50 UC  
Universidad de Cantabria

ih  
FUNDACION  
INSTITUTO DE HIDRÁULICA  
AMBIENTAL DE CANTABRIA

X



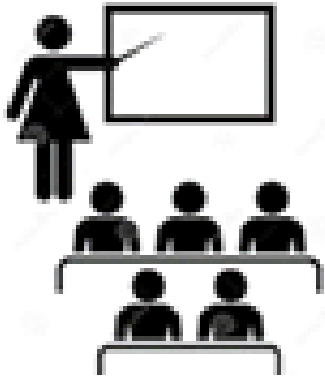
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- Main activity
- A lot of experience
- Graduate/postgraduate degrees
- “Teachers”
- Global & specific subjects
- External verification of contents
- .....

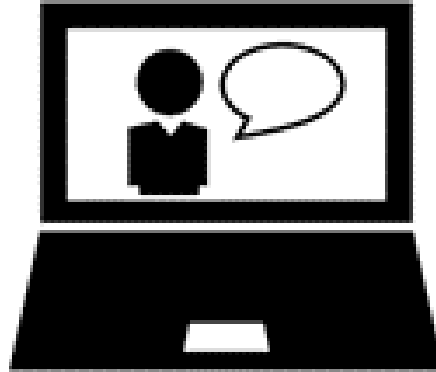
- No specific interest for teaching
- No teaching skills
- Very specialized work
- No allocated time
- Scientific communicators
- **Very specialized courses!**
- .....



## Pre-COVID



## COVID



## Post-COVID



## Present





Inflation of training activities in online format



Changing required skills and competences



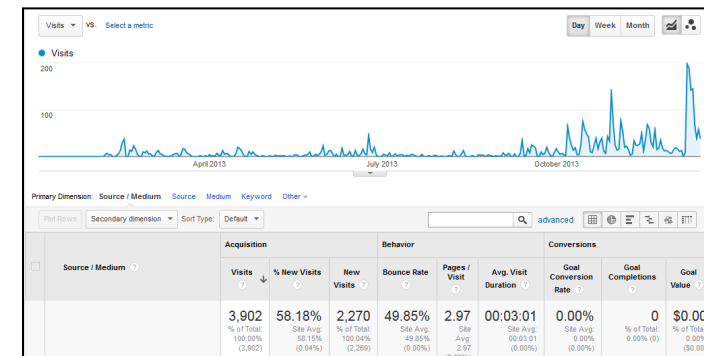
Flexibility for implementation of certified learning pathways



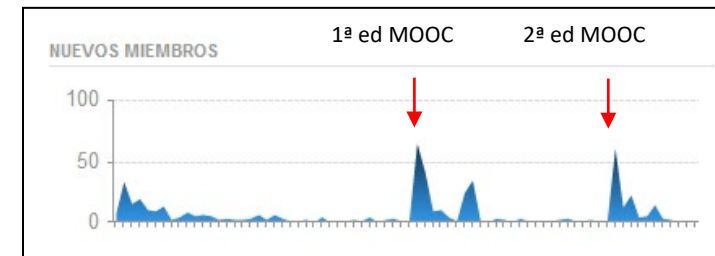
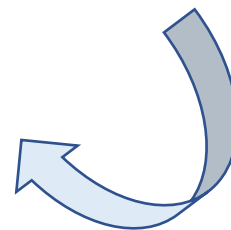
Need for quality assurance and interaction with students

## 2. Background

- 2014-2019 → 8 editions
- 9000 enrolled students → 2000 certified
- 45% increase of visits to the IHC web page



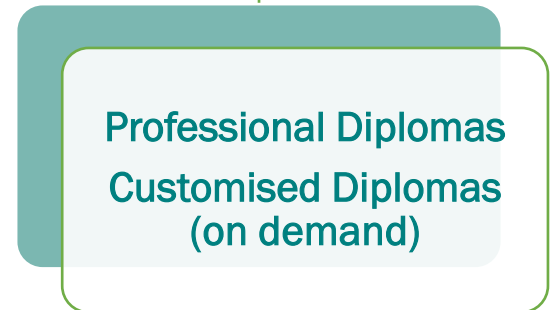
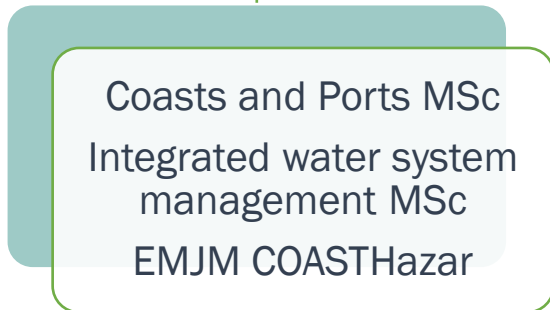
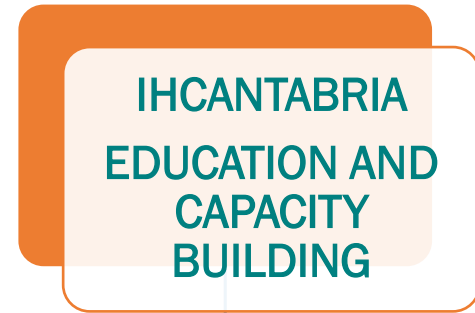
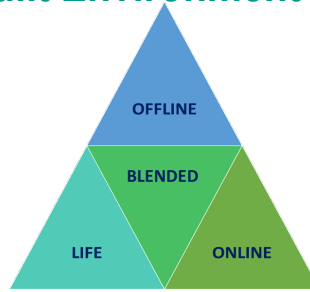
- LinkedIn group → 48% new members (800)





### 3. IHCantabria CE approach

ECCE-IH



## 4. First steps: MOOCs → Learning itinerary. 2 Approaches

*“Specialized TRaining on Applied tools for Sustainable MARine EcosystemS”*

**TRASMARES**

EU ERASMUS+ . **KA203**: Strategic Partnerships for HE

### General objective

To consolidate an **innovative, open, online and officially certified education, by means of a micro-credential** integrated by different thematic MOOCs on “Sustainable Marine Ecosystems”.

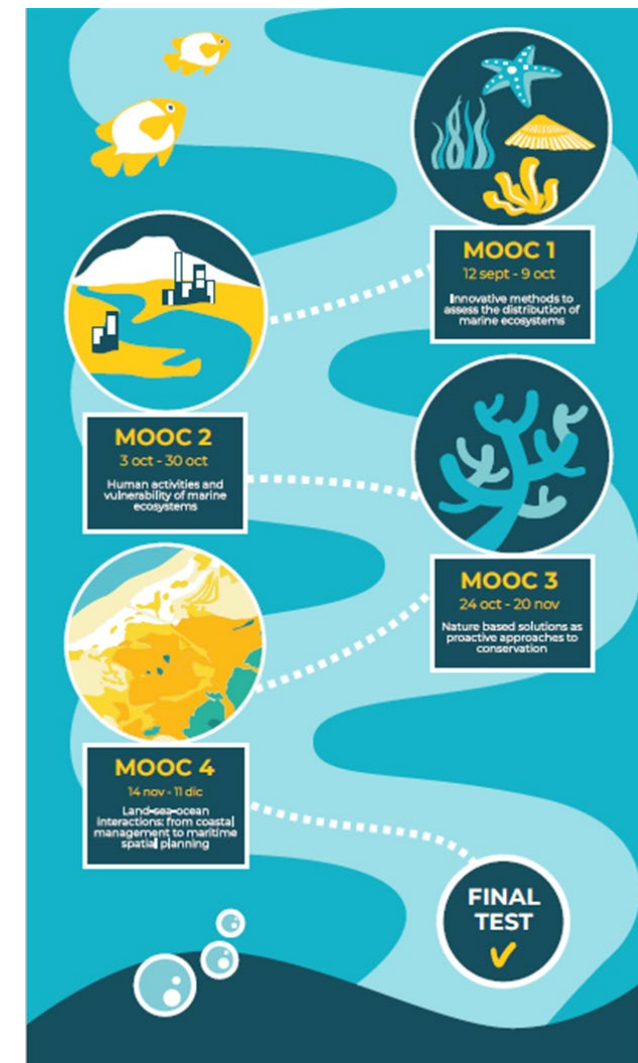
### Specific objectives

- Develop a flexible, digital and dynamic **specialized capacity building**.
- Facilitate an open, online, flexible and **lifelong learning**.
- Promote the **digital transformation**.
- Reinforce the **internationalization**.

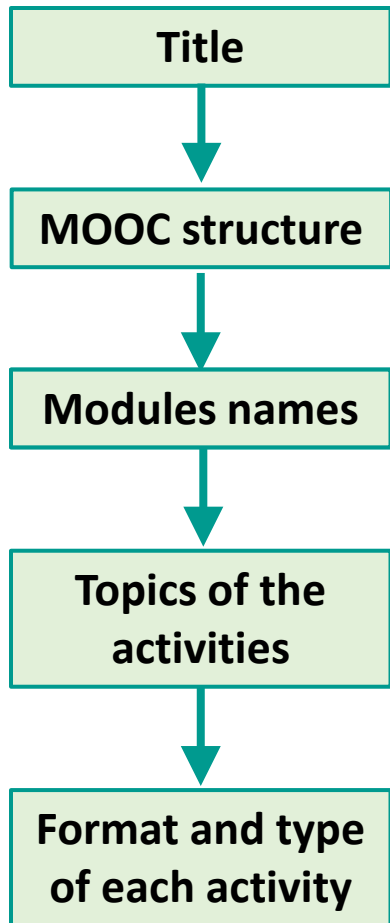




Pilot edition: 2022 → Next 3 courses: September – December (2023-2025)



**Itinerary** (<https://miriadax.net/curso/itinerario-specialized-training-on-applied-tools-for-sustainable-marine-ecosystems/>)



MOOC1 - INNOVATIVE METHODS TO ASSESS THE DISTRIBUTION OF MARINE ECOSYSTEMS			
MODULE	ACTIVITY	TYPE	FORMAT
<b>Introduction to the course</b>	Presentation of the course	Introduction	Talking head
<b>Introduction to marine ecosystems</b>	Marine ecosystems: types and definitions	Master class	Talking head+images
	Saltmarshes	Concept	Talking head+videos
	Seagrass meadows	Concept	Talking head+videos
	...	Concept	Talking head+videos
	EVALUATION: Module 1	Evaluation	Test
<b>Marine ecosystems characterization</b>	Introduction to Module 2	Introduction	Talking head
	Approaches to biodiversity characterization	Master class	Talking head
	...	Concept	Talking head+videos
	EVALUATION: Differences between species and functional diversity	Evaluation	Practical exercise
	Biogeographical patterns	Master class	Talking head
	Vertical zonation of marine species at local scales	Concept	Animation
	Temporal scale in species distribution: Phenology	Concept	Talking head
	EVALUATION: Module 2	Evaluation	Practical exercise
<b>Functions, services and benefits of marine ecosystems</b>	Introduction to Module 3	Master class	Talking head
	Starting point: the UN Millennium Declaration	Interview	
	Do we know what are the marine ecosystem services in our surroundings?	Survey	
	Biophysical quantification of ecosystem services	Concept	Animation
	Monetary valuation of ecosystem services	Concept	Animation
	Cultural services	Interview	
		EVALUATION: Module 3	Evaluation



PROGRAM LIFE- ADAPTATION TO CLIMATE CHANGE.



Adaptation to climate change through management and restoration of European estuarine ecosystems

**MOOC 1:** CLIMATE CHANGE SERVICES PROVIDED BY ESTUARINE ECOSYSTEMS AND QUANTIFICATION TOOLS

**MOOC 2:** CLIMATE CHANGE RISK IN COASTAL AREAS, AND ESTUARINE-BASED ADAPTATION STRATEGIES

**MOOC 3:** FINANCIAL TOOLS TO SUPPORT ESTUARINE RESTORATION AND CONSERVATION PROJECTS

**Are these courses for you?**  
These courses are intended for professionals, graduates and postgraduate students who are interested in deepening their knowledge of the role of estuarine ecosystems as an adaptation measure in the context of climate change.

**Contact:**  
adaptablues@lifeadaptablues.eu

**More information:**  
<https://lifeadaptablues.eu/>

**Enrolment:**



**Open Online Courses on Ecosystem-based approaches for climate change adaptation in estuarine areas**

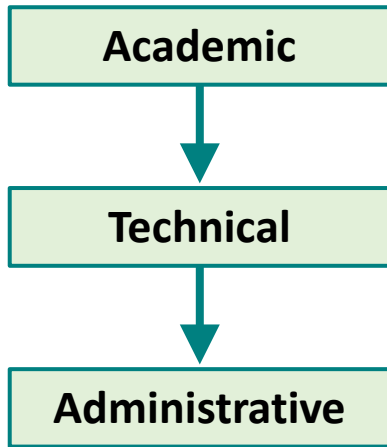
Project co-funded with the contribution of the LIFE Programme of the European Union

ADAPTA BLUES

- A different way to engaging scientists & funding Continuous Education activities.
- An opportunity for R&D Groups to disseminate results and “capacities”.
- A preliminary requirement to apply to advanced/specialized education courses.
- A perfect approach to implement the EU Strategies on Permanent Education



## 5. Lessons learnt



- Poor digital skills of teachers and researchers
- Difficulty in synthesizing scientific knowledge
- Need for learning objectives based on “real experiences” (*learning by doing*)
- Interesting experience for R&D Institutes
- Engagement of Mass media – Social media professionals
- Planning of Recording and Editing activities
- Need of an e-learning platform: Contents’ layout / Students’ access
- MOOC’s homogeneity assurance & quality control: Structure / Videos
- Official recognition of acquired competences (ECTS, credits, diplomas...)
- Importance of funding schemes (LIFE, ERASMUS+) for new capacity building actions



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# INTERNATIONAL RESEARCH SYMPOSIUM Climate Change Adaptation in the Coastal Built Environment

19<sup>th</sup> - 20<sup>th</sup> June 2023  
Santander (Spain)

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