ACADEMIC GUIDE

56-MC3-001 University Microcredential in Adaptation Pathways through Management and Restoration of Estuarine Ecosystems (ADAPTABLUES)

ACADEMIC BOARD

Coordinator

Name	Position	Center	Form. Acad. / Exp. Prof.
JOSÉ A JUANES	Full Professor	Universidad de Cantabria (UC)	PhD in Biology

Certificate Directors

Name	Position	Center	Background
JOSÉ A JUANES	Full Professor	Universidad de Cantabria (UC)	PhD in Biology
MARÍA RECIO	Technologist	Fundación Instituto Hidráulica Ambiental de Cantabria (FIHAC)	PhD in Marine Sciences

Course Directors

Name (Course)	Position	Center	Background
CRISTINA GALVÁN (MOOC 1)	Researcher	Fundación Instituto Hidráulica Ambiental de Cantabria (FIHAC)	PhD in Marine Sciences
JAVIER LÓPEZ (MOOC 2)	Full Professor	Universidad de Cantabria (UC)	PhD in Civil Engineering
MARÍA RECIO (MOOC 3)	Technologist	Fundación Instituto Hidráulica Ambiental de Cantabria (FIHAC)	PhD in Marine Sciences
INÉS MAZARRASA (TFP)	Researcher	Fundación Instituto Hidráulica Ambiental de Cantabria (FIHAC)	PhD in Marine Sciences

International Advisors

Nombre	Categoría	Universidad u Organismo
MAX RICKER	Researcher	The Nature Conservancy (TNC)
LAURA AIROLDI	Full Professor	University of Padova (IT)
JOAO NETO	Senior Researcher	University of Coimbra (PT)

UC Department: Environmental Hydraulics Institute (IHCantabria)

GENERAL INFORMATION

Certificate: University Microcredential in Adaptation Pathways through Management and Restoration of Estuarine Ecosystems

Acronym: ADAPTABLUES

Languages: Mainly English (EN), with subtitles in Spanish, Italian and Portuguese

Plataform: Virtual classroom (Moodle)

Programme code: 56−MC3−001

Edition #: 3

Qualification: Level 7 of the European Qualification Framework (EQF). MECES 3 in Spain.

ISCED codes: 0521 Environmental sciences
0532 Earth Sciences
0732 Civil Engineering
Economics

Modalidad: Virtual asIncronous

Students #: Mín.: 5; Max.: 50

ECTS:

Tipo	ECTS
MOOC courses	6,00
Final Programme Work	2,00
Total	**8,00**

Academic Fee: 300,00 €

Scholarships: The *Programa Santander- Microcredenciales 2026* offers *9 full scholarships* for students previously enrolled in the Santander Bank - Open Academy platform:
https://app.santanderopenacademy.com/es/program/microcredenciales-2026-i-edicion

AGENDA

Starting date: 13−05−2026
Closing date: 31−07−2026
Registration period: 14−04−2026 / 12-05-2026
Final Programme Work (TFP):
Global Test: 15-06-2026 & 29-06-2026
TFPs Assignment: 16-06-2025 & 30-06-2026
TFPs Evaluation: 27-07-2026

REQUIREMENTS

DOCUMENTS TO REGISTER

- Curriculum Vitae
- Copy of the ID (DNI, NIE or Passport)

BACKGROUND

Open to VET, undergraduate, master and PhD students, professionals and civil servants from different disciplines, with no previous requirements other than the interest in this topic.

JUSTIFICATION

This degree provides an integrated view of the topic of climate change adaptation in coastal areas through a multidisciplinary approach that combines new knowledge on the ecology, risk assessment and environmental management of estuarine ecosystems.

OVERALL OBJECTIVES

- Introduce the concepts of estuarine ecosystems: what is an estuary, what are its main components, what ecosystem services do they provide in relation to climate change.
- Define the basic concepts of risk and climate change in the coastal environment, as well as the different risk assessment systems, including the concept of 'nature-based solutions', by defining them and presenting real cases of application of this type of adaptation measures.
- Highlight the role of estuarine ecosystems as examples of adaptation to climate change in the different adaptation strategies, introducing the economic assessment of the ecosystem services provided by these natural communities, as well as the different existing financing methods for the implementation of conservation and restoration measures of estuarine ecosystems in relation to their role of protection and mitigation of climate change.

CONTENTS

1. **Climate change services provided by estuaries and estuarine ecosystems***
   - 1.1. Introduction to estuarine ecosystems
   - 1.2. Services and benefits of estuarine ecosystems
   - 1.3. Mitigation service
   - 1.4. Adaptation services against flooding and erosion
2. **Climate change risk in coastal areas and estuarine-based adaptation strategies***
   - 2.1. Introduction to climate change
   - 2.2. Risk analysis
   - 2.3. Climate change risk on coastal ecosystems
   - 2.4. Introduction to Nature-based Solutions
3. **Financial tools to support estuaries restoration and conservation projects***
   - 3.1. Strategies to climate change adaptation through conservation
   - 3.2. Economic value of ecosystem services: methods and tools
   - 3.3. Incentivizing, financing and governing Nature-based Solutions
   - 3.4. Types of financial services: Insurances
4. **Final Programme Work (TFP)**

*Teaching materials of the 3 MOOCs were co-created, under creative commons licence, in the *AdaptaBlues project "Adaptation to climate change through management and restoration of European estuarine ecosystems", funded by the EU LIFE programme (LIFE18 CC/ES/001160)* and developed through the collaboration of academics and researchers from the Institute of Environmental Hydraulics of the University of Cantabria, coordinator of the project, and the University of Coimbra.

COMPETENCES

- Students will know the main biophysical characteristics of estuarine ecosystems and the goods and benefits they provide to society.
- Students will be able to understand the different components of risk: hazard, vulnerability and exposure, and know how to apply them to identify the main risks associated with climate change in estuarine systems.
- Students will be able to differentiate between the concepts and possible measures that can be applied in the field of adaptation and mitigation of the effects of climate change in estuarine areas.

LEARNING OUTCOMES

- Students will be able to apply their knowledge of climate change adaptation in estuaries to the development of a practical case study.

LEARNING ACTIVITIES

- Review of recorded lessons
- Resolution of practical exercises
- Elaboration of the final programme work

EVALUATION SYSTEM

- Online tests at the end of each module of each MOOC and the final test of each course. The final mark for each MOOC will be obtained as the weighed mark of the different tests.
- Global test of the 3 MOOCs, previous and compulsory for the assignment of the Final Programme Work (TFP)
- Development and defense of the TFP.

MICROCREDENTIAL ORGANIZATION

Course name	Te ECTS	Pr ECTS	Total ECTS	Tipology
A−56−001 − Climate change services provided by estuaries and estuarine ecosystem	2,00	0,00	2,00	Obligatory
A−56−002 − Climate change risk in coastal areas and estuarine-based adaptation strategies	2,00	0,00	2,00	Obligatory
A−56−003 − Financial tools to support estuaries restoration and conservation projects	2,00	0,00	2,00	Obligatory
A−56−004 − Final Programme Work (TFP)	1,80	0,20	2,00	Obligatory
TOTAL			**8,00**	

	Course.	ECTS	Time (hours)									
			Presential			Virtual						
			Te	Pr	Seg	Te		Pr		Seg		Ta
						S	A	S	A	S	A	
	A−56−001 (1)	2,00	0,00	0,00	0,00	0,00	20,00	0,00	0,00	10,00	0,00	20,00
	A−56−002 (1)	2,00	0,00	0,00	0,00	0,00	20,00	0,00	0,00	10,00	0,00	20,00
	A−56−003 (1)	2,00	0,00	0,00	0,00	0,00	20,00	0,00	0,00	10,00	0,00	20,00
	A−56−004 (1)	2,00	0,00	0,00	0,00	5,00	0,00	0,00	0,00	5,00	0,00	40,00
Total		8,00	0,00	0,00	0,00	5,00	60,00	0,00	0,00	35,00	0,00	100,00

Te: Theory, Pr: Practice, Seg: Monitoring, Ta: Autonomous work, S: Synchronous activities, A: Asynchronous activities

FINAL PROGRAMME WORK (TFP)

Students who complete the 3 MOOCs must pass a “global test”, based on a set of 100 predefined questions, before starting the development of their Final Programme Work (TFP).

The TFPs will be selected by the students from a list of works proposed by the teaching team, each one assigned to a teacher. Weekly face-to-face monitoring of students will be organized by each professor at the General Forum of the Moodle.

Each student must develop the TFP individually, having to submit a written document (max 15 pages) and a 5-minute video with the presentation of their work. Once finalized the submitting period, the students will discuss the results obtained with the Academic Committee, concluding the evaluation of the TFP.

RECOGNITION OF CREDITS

Those students who have obtained the diplomas of completion of the MOOCs in previous editions may request the recognition of the credits obtained, at the time of their incorporation into the Program.

UC General criteria for credit recognition

- In order to proceed with the recognition requested, there must be a coincidence of at least 75% of the content and teaching load of the degree, module or subject studied in relation to that of the degree, module or subject to be recognized. Degrees, modules or subjects that are subject to recognition will retain their original grade.
- The Academic Committee or, where appropriate, the Certificate Directors, may also recognize work and professional experience provided that this experience is related to the competences inherent to said degree and they have a level appropriate to it.
- The recognition of degrees, modules or subjects taken at other universities will not affect the price to be paid for this certificate.

RESOURCES

HUMAN RESOURCES

Academic staff of the University of Cantabria (UC):

Name	Category
JUANES, JOSÉ ANTONIO	Full Professor
LOSADA, ÍÑIGO J	Full Professor
LÓPEZ, JAVIER	Full Professor
TORRES, SAÚL	Permanent Professor
DÍAZ, PEDRO	Associate Professor
MAZA, MARÍA EMILIA	Permanente Professor

Academic staff of the Fundación Instituto Hidráulica Ambiental de Cantabria (FIHAC):

Name	Category
RECIO, MARÍA	Technologist
GALVÁN, CRISTINA	Researcher
MAZARRASA, INÉS	Researcher
ONDIVIELA, BÁRBARA	Researcher
JIMÉNEZ, MARÍA	Teaching Support staff

TECHNOLOGICAL RESOURCES

- Learning platform: Moodle
- Multipurpose classroom: Aula NILO (IHCantabria)