

## SUBJECT TEACHING GUIDE

529 - Maritime and Atmospheric Climate

Master's Degree in Coasts and Ports

Academic year 2024-2025

1. IDENTIFYING DATA					
Degree	Master's Degree in Coasts and Ports			Type and Year	Compulsory. Year 1
Faculty	School of civil Engineering				
Discipline					
Course unit title and code	529 - Maritime and Atmospheric Climate				
Number of ECTS credits allocated	2	Term	Semester based (1)		
Web					
Language of instruction	Spanish	English Friendly	Yes	Mode of delivery	Face-to-face

Department	DPTO. CIENCIAS Y TECNICAS DEL AGUA Y DEL MEDIO AMBIENTE				
Name of lecturer	MELISA MENENDEZ GARCIA				
E-mail	melisa.menendez@unican.es				
Office	Edificio IH Cantabria. Planta: + 2. DESPACHO (226)				
Other lecturers					

### 3.1 LEARNING OUTCOMES

- The student will acquire necessary knowledge to understand climatic variability at different time scales (within a year, inter-annual variability, secular trends, etc.) of the environmental variables that will be used throughout the Master.
- The student will be able to associate and characterize the different climatic processes associated with meteorology and oceanography and will learn the nomenclature and meaning of the terms.
- The student will know and be able to manage met-ocean data bases in different formats.
- The student will be able to interpret and manage the meteo-oceanic and climate information available in the network.
- The student will be able to make a report in which the characteristics of the waves, sea level and wind will be described, both in the short and long term, and at any coastal location, even for unusual extreme events.
- The student will know the meteo-oceanographic variables and how to combine deterministic and probabilistic variables for their application in coastal and port engineering problems.
- The student will understand the phenomenon of Climate Change and the specific implications associated with variables of interest in coastal engineering

### 4. OBJECTIVES

- The student should know and understand the main phenomena associated with the Earth climate system, especially those processes associated with water and energy flows in the marine and coastal environment.
- The student will be able to handle the instrumental and numerical databases to analyze the characteristics of the maritime climate at any coastal location.
- The student will understand how to use climate variability information at different time scales of interest (eg seasonality, interannual variability, long-term trends, climate change projections)

### 6. SUBJECT PROGRAM

CONTENTS	
1	The Climate system
2	Oceanography and Meteorology
3	Met-ocean databases
4	Climate Variations and Climate Change

**7. ASSESSMENT METHODS AND CRITERIA**

Description	Type	Final Eval.	Reassessn	%
Ongoing evaluation	Written exam	No	Yes	90,00
Class attendance	Others	No	No	10,00
<b>TOTAL</b>				<b>100,00</b>
<b>Observations</b>				
The evaluation will be carried out from a weighted assessment of exercises, exams and the participation of the student in the classroom.				
<b>Observations for part-time students</b>				
The evaluation will be made as follows: - Partial exams (50%) - Exercises and studies (40%) - Class attendance and participation (10% of the final grade)				

**8. BIBLIOGRAPHY AND TEACHING MATERIALS**

**BASIC**

Stocker, T. F. (Ed.). (2014). Climate change 2013: the physical science basis: Working Group I contribution to the Fifth assessment report of the Intergovernmental Panel on Climate Change. Cambridge University Press.