COURSE DISCRIPTION

1. GENERAL

SCHOOL	ENVIRONMENT, GEOGRAPHY AND APPLIED ECONOMICS		
DEPARTMENT	GEOGRAPHY		
LEVEL OF COURSE	Undergraduate		
COURSE CODE		**SEMESTER**	2c
COURSE TITLE	METEOROLOGY-CLIMATOLOGY		

STRUCTURE OF TEACHING ACTIVITIES	**TEACHING HOURS PER WEEK**	**NUMBER OF CREDITS ALLOCATED (ECTS)**
Lectures and Laboratory Classes	3	5

TYPE OF COURSE	Compulsory
PREREQUISITES	-
LANGUAGE OF INSTRUCTION	GREEK
COURSE OFFERED TO ERASMUS STUDENTS	YES (in English if required)
(URL)	http://meteoclima.hua.gr

2. EXPECTED LEARNING OUTCOMES

Learning outcomes

Describe the objectives of the course as well as the expected learning outcomes

The course of Meteorology-Climatology is an introductory course in the fields of atmospheric science and applied climatology. The student is introduced to the fundamental principles of thermodynamics, such as the ideal gas law, the equation of state, and adiabatic processes. In the context of atmospheric kinematics, the course covers both apparent and real forces acting in the atmosphere, as well as the motion of air masses. The syllabus also includes the processes of cloud formation and the mechanisms of precipitation development, which are essential components of atmospheric physics. The practical session of the course provides fundamental knowledge on plotting meteorological charts and atmospheric stability conditions while the laboratory work is essential for the learner in order to demonstrate its skills on data processing and its long-term statistical analysis. At the end of the course the student is expected to be able to understand and analyze the basic atmospheric processes and their spatiotemporal variability. The practical session of the course provides fundamental knowledge on plotting meteorological charts and atmospheric stability conditions while the laboratory work is essential for the learner in order to demonstrate its skills on data processing and its long-term statistical analysis.

3. COURSE CONTENTS

1. Basic characteristics of the Earth system

2. Principals on Atmospheric thermodynamics
3. Atmospheric dynamics
4. Atmospheric stability
5. Spatiotemporal scales of motion in the atmosphere
6. Fronts and weather systems
7. Fundamentals of the global climate system

4. TEACHING AND ASSESSMENT METHODS

TYPE OF LECTURES	In class lectures Laboratory Lectures and Practice
ICT USE	ICT use, course website, interactive experiments, meteorological data and e-class
TEACHING STRUCTURE	

Activity	*Hours per semester*
Lectures	26
Laboratory	13
Weekly assignments	13
Project	13
Studying	65
TOTAL	***130***

ASSESSMENT METHODS	Assessment Language: Greek The basic assessment type of the course is the written examination at the end of the semester (3 hours). It is combined with a final written paper including a case study with real data gathered from meteorological stations. There is also a short time (~10 minutes) compulsory test at the beginning of each laboratory session based on the contents of the previous laboratory course. The possible results of each practice test are *pass* or *no pass* and the student is necessary to pass 9 out of 12 tests in order to participate in the procedure of the final examination.

5. RECOMMENDED READING

Katsafados, P., Mavromatidis, E., & Varlas, G. (2023). Physical Meteorology [Undergraduate textbook]. Kallipos, Open Academic Editions. https://dx.doi.org/10.57713/kallipos-218 (in greek).