COURSE OUTLINE

(1) General

School:	Social Sciences		
Academic Unit:	Geography		
Level of studies	Undergraduate		
Course Code:	GEO 106	**Semester:**	B
Course Title:	Physical Geography - Climatology		
Independent Teaching Activities	**Weekly Teaching Hours**	**Credits**	
Lecture	3		
		Course total	5
Course Type:	Required		
Prerequisite Courses:	None		
Language of Instruction and Examinations	Greek		
Is the course offered to Erasmus students:	No		
Course Website (Url):	https://geography.aegean.gr/pps/index_en.php?content=0&lesson=106		

(2) Learning Outcomes

Learning Outcomes

The main purpose of the course is the analysis and understanding of the climate processes in the earth-atmosphere system. Students completing this course will be able to describe the various components and processes of the Earth's climate system, the interrelations between the different climate parameters and their variability in space and time, and to explain the distribution of different climate regions of the world. As part of the course, students learn to analyse weather records and read and interpret weather maps. This approach allows students to realize the physical aspects of the atmosphere and the regional characteristics of climate from an applied viewpoint. Upon successful completion of this course, students will be able to analyse climate data and display their temporal (diagrams) and spatial (maps) behaviour using different methods of analysis.

General Competences

1. Working independently
2. Working in an interdisciplinary environment
3. Respect for the natural environment
4. Criticism and self-criticism
5. Production of free, creative and inductive thinking

(3) Syllabus

The course focuses on the analysis of the processes of the climate system and how these processes shape the geographical distribution change of climate. It examines the main components of the climate system, including the energy balance at the surface, the water cycle, the general circulation of the atmosphere and oceans and their geographic variation. The individual modules of the course include: The earth and its

atmosphere (atmospheric composition and vertical structure of the atmosphere). Radiation in the atmosphere (solar and terrestrial radiation, energy balance at the surface of the earth). The greenhouse effect and the ozone layer's depletion, the temperature of the atmosphere (periodic variations in air temperature, temperature inversions, temperature distribution on the earth surface). Atmospheric moisture (hygrometric parameters, evaporation, condensation, clouds, precipitation). Atmospheric pressure (pressure gradient, variations in atmospheric pressure, distribution of atmospheric pressure on the earth's surface). Wind. Atmospheric disturbances (air masses, fronts, anticyclones, depressions, storms, hurricanes). Climatic classification (the Koppen system, the global climatic patterns).

(4) Teaching and Learning Methods - Evaluation

Delivery:	Face to face	
Use of Information and Communication Technology:	Student contact electronically. Power point presentations.	
Teaching Methods:	**Activity**	**Semester workload**
Lecture	26	
Laboratory practice	13	
Performance evaluation/Exams	3	
Project	35	
Non-supervised study	48	
	Course total<	125
Student Performance Evaluation	Written examination.	

(5) Attached Bibliography

1. Flocas, A., 1994: Meteorology and Climatology courses. Ziti Editions, Thessaloniki (in Greek).Chronopoulou-Sereli A. and Flocas A. 2010. Agricultural Meteorology and Climatology courses. Ziti Editions, Thessaloniki (in Greek).
2. Barry R. and Chorley R., 2001: Atmosphere, Weather and Climate, 7th Edition, Routledge, London.
4. Hidore J., Oliver, J., Snow, M. and Snow, R., 2009: Climatology: An Atmospheric Science, 3rd Edition, Prentice Hall, Upper Saddle River, New Jersey
6. Robinson P. and Henderson-Sellers, A., 1999: Contemporary Climatology, 2nd Edition, Prentice Hall, Upper Saddle River, New Jersey.
8. Rohli, R. and Vega A, 2010: Climatology, 2nd Edition, Jones & Bartlett Learning.
10. Makrogiannis, T. and Sahsamanoglou, H., 1993, Elements of General Meteorology. Art of Text, Thessaloniki (in Greek).
12. Maheras, P. and Mpalafoutis, C., 1997, General Climatology with elements of Meteorology. University Studio Press, Thessaloniki (in Greek).
14. Sahsamanoglou, H. and Mploutsos, A., 1998, Physical Climatology. Ziti Editions, Thessaloniki (in Greek).