

COURSE OUTLINE

(1) General

School:	Social Sciences		
Academic Unit:	Geography		
Level of studies	Undergraduate		
Course Code:	GEO 315	Semester:	C
Course Title:	General Meteorology		
Independent Teaching Activities	Weekly Teaching Hours	Credits	
Lecture		3	
		Course total	5
Course Type:	Optional		
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=315		

(2) Learning Outcomes

Learning Outcomes

The aim of this course is to enable students to understand the basic concepts of meteorology and weather events at planetary, synoptic and regional scale. After completing this course students will have gained the essential background for further studies in weather and climate. Particular objectives of the course are: (1) to provide students with a basic understanding of basic meteorology. For example, students should be able to explain the role of the balance between solar and terrestrial radiation in the formation of weather patterns, the causes of atmospheric instability, describe weather phenomena associated with warm, cold and occluded fronts atmospheric conditions associated with the formation of storms, hurricanes and tornadoes. (2) Students to be able to interpret the general characteristics of weather maps, and further to become familiar with the temporal and spatial representation of meteorological variables (e.g. temperature, atmospheric pressure). Finally, students will learn about modern methods of weather forecasting and the limitations of computer models.

General Competences

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

(3) Syllabus

The purpose of "General Meteorology" is to introduce the basic concepts of the science of meteorology. This is an introductory course studying the Earth's atmosphere and processes that govern its structure, composition, and dynamics. Emphasis is also given to the study of meteorological variables, their relationships and interconnections, and their important role in determining weather and climate, including

the applications and tools used in modern forecasting and research. The content of the course included the following topics: Air temperature and humidity. Statics of the atmosphere. Atmospheric pressure and wind. Clouds and Precipitation. Meteorological instruments. Atmospheric disturbances at the surface (air masses, fronts, depressions, anticyclones). Upper level atmospheric disturbances (basic isobaric surfaces, Isohypes, upper level weather maps, upper level general circulation). Station model, weather analysis and forecasting.

(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		39
Project		40
Non-supervised study		48
Performance evaluation/Exams		3
	Course total<	130
Student Performance Evaluation	Written examination (70%) and essay report (30%).	

(5) Attached Bibliography

1. Donald Ahrens D, 1999: Essentials of Meteorology, ION Publishing Group, Athens, Greece (translated in Greek).
2. Flocas, A., 1994: Meteorology and Climatology courses. Ziti Editions, Thessaloniki (in Greek).
3. Ahrens, C.D., 2009: Meteorology Today, 9th Edition, Brooks/Cole, Cengage Learning, Belmont, CA.
5. Ahrens, C.D., 2011: Essentials of Meteorology: An Invitation to the Atmosphere, 6th Edition, Cengage Learning.
7. Barry R. and Chorley R., 2001: Atmosphere, Weather and Climate, 7th Edition, Routledge, London.
9. Lutgens, FK., Tarbuck EJ., Tasa D., 2009: The Atmosphere: An Introduction to Meteorology, 11th Edition, Prentice Hall.
11. DeFelice, T.P., 1998: Meteorological Instrumentation and Measurement, Prentice Hall, N.J.
13. Makrogiannis, T. και Sahsamanoğlu, H., 1993: Elements of General Meteorology. Art of Text, Thessaloniki (in Greek).
15. Sahsamanoğlu, H. and Makrogiannis, T., 1998: General Meteorology. Ziti Editions, Thessaloniki (in Greek).