

## COURSE OUTLINE

### (1) GENERAL

<b>SCHOOL</b>	School of Environment		
<b>ACADEMIC UNIT</b>	Department of Environment		
<b>LEVEL OF STUDIES</b>	Undergraduate		
<b>COURSE CODE</b>	<b>238Y</b>	<b>SEMESTER</b>	<b>3</b>
<b>COURSE TITLE</b>	Climatology-Meteorology		
<b>INDEPENDENT TEACHING ACTIVITIES</b>		<b>WEEKLY TEACHING HOURS</b>	<b>CREDITS</b>
Lectures		3	
Laboratory exercises			
<b>Total credits</b>			<b>5</b>
<b>COURSE TYPE</b> <i>general background, special background, specialised general knowledge, skills development</i>	General background		
<b>PREREQUISITE COURSES:</b>	-		
<b>LANGUAGE OF INSTRUCTION and EXAMINATIONS:</b>	Greek		
<b>IS THE COURSE OFFERED TO ERASMUS STUDENTS</b>	No		
<b>COURSE WEBSITE (URL)</b>	<a href="http://www.env.aegean.gr/studies/undergraduate-degree/curriculum/climatology-meteorology/">http://www.env.aegean.gr/studies/undergraduate-degree/curriculum/climatology-meteorology/</a>		

### (2) LEARNING OUTCOMES

<b>Learning outcomes</b>
<ul style="list-style-type: none"> <li>• Description of principles primarily of climatology and secondarily of meteorology</li> <li>• Identification of the physical mechanisms that affect the climate of a region</li> <li>• Assessment of the importance of climatic quantities for human activities and well-being</li> <li>• Analysis of atmospheric and climate processes in relevant environmental problems (ozone depletion, climate change, etc)</li> </ul>
<b>General Competences</b>
Production of free, creative and inductive thinking Production of new research ideas Working independently Search for, analysis and synthesis of data and information, with the use of the necessary technology

### (3) SYLLABUS

- Constitution and structure of the atmosphere, ozone layer
- Heat transfer, radiation
- Solar energy, radiation budget
- Greenhouse effect, atmospheric temperature, temperature inversion
- Wind chill, humidity, dew point
- Condensation, clouds, atmospheric stability
- Cloud formation, rain creation
- Precipitations, atmospheric pressure
- Wind, geostrophic and surface wind
- Pressure systems, breezes, thermal circulation
- General circulation of the atmosphere, el Niño, air masses
- Fronts, polar front theory
- Earth climates, Koeppen classification

### (4) TEACHING and LEARNING METHODS - EVALUATION

<b>DELIVERY</b>	Face-to-face	
<b>USE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY</b>	The distribution of course material, as well as a significant part of the evaluation is through the electronic platform moodle (aegeanmoodle.aegean.gr)	
<b>TEACHING METHODS</b>	<b>Activity</b>	<b>Semester workload</b>
	Lectures	39
	Study and analysis of bibliography	81
	Course total	<b>120</b>
<b>STUDENT PERFORMANCE EVALUATION</b>	Language of evaluation: Greek <ul style="list-style-type: none"><li>• Compulsory weekly quizzes on moodle (30% of the grade)</li><li>• Final examination on moodle (70% of the grade)</li></ul> Both quizzes and final exam consist of multiple-choice questions and quantitative problems	

### (5) ATTACHED BIBLIOGRAPHY

- *Suggested bibliography:*

1. E. Aguado, J. E. Burt, (2019), Understanding weather and climate, in Greek, ION Editions, Athens

2. A. A. Flocas, (1997), Lessons in meteorology and climatology, in Greek, Zitis Editions, Thessaloniki
3. G. Donald Ahrens, (1999), Basic principles of meteorology, in Greek, ION Editions, Athens

- *Related academic journals:*