ΔΠΥ741 - CLIMATE CHANGE & FORESTS

LEVEL	*Undergraduate*		
CODE	ΔΠΥ741	**STUDENT SEMESTER**	5th
COURSE TITLE	CLIMATE CHANGE & FORESTS		

ACTIVITIES	**WEEKLY HRS**	**ECTS**
Lectures	3	
Workshops		
TOTAL	3	6

TYPE OF COURSE	Compulsory course / Specialized course
PREREQUISITES:	None
LANGUAGE TEACHING AND EXAMINATION:	Greek
THE COURSE IS OFFERED TO ERASMUS STUDENTS	Yes
WEBPAGES COURSE (URL)	

1. LEARNING OUTCOMES

Learning Outcomes

The aim of this course is to provide students with an understanding of the essential theoretical background in the field of Meteorology and Climatology.
Upon completion of the course, the students:
- will have understood the phenomena taking place in the lower atmospheric layer and their impact on plant growth and development
- will be able to identify the bioclimatic areas in Greece
- will have become familiar with meteorological data analysis on a basic level
- will have understood the framework of the International Convention for Climate Change, the Kyoto Protocol, the National Climate Change Strategy

General Skills

- Researching and performing analysis and synthesis of data and information by means of appropriate technology.
- Teamwork
- Adapting to new conditions
- Respect for the natural environment
- Promotion of free, creative and deductive reasoning

2. COURSE CONTENT

Περιγραφή του θεωρητικού μέρους:
Earth and atmosphere. Solar radiation and effect on plant organisms. Forest-air temperature interactions. Atmospheric precipitation and its effect on the forest. Hydrological cycle. Description of the Earth's climate. The climate of Greece. Bioclimatic indicators. Climatic conditions and types of vegetation. Concept of climate change. Climate history of the Earth. Causes of climate change. Carbon cycle. Greenhouse effect. The role of land use change in climate change. Impacts of climate change on forests. Adaptation of forest ecosystems to climate change. International Conventions on Climate Change. Kyoto Protocol. National Strategy for Adaptation to Climate Change. Forest/air temperature interactions. Instruments for measuring meteorological - climatic data.

3. TEACHING AND LEARNING METHODS - EVALUATION

<table>
<tr><td>DELIVERY METHOD</td><td>The Herbartian approach in teaching is employed, which includes the following stages:
1. Preparing the students to receive new knowledge, mainly by utilizing their previous knowledge on the subject.
2. The new lesson unit is presented.
3. New knowledge is compared/associated with previous knowledge.
4. Generalization and conclusions.
5. Application of new knowledge in practice.
The lesson consists of two parts:
Theoretical part,
Practical work / Workshops

The <u>theoretical part</u> requires tha active participation of the students in the learning process that takes place in the classroom and involves the use of interactive tools. Students are encouraged to participate in research activities.
<u>Workshops</u> entail the compulsory participation of the students in activities they select from the activity list of each unit of the coursebook. Furthermore, important research findings in specific sectors of this scientific field are stated and discussed. Lastly, <u>educational field trips</u> take place during the semester, in which student participation is compulsory.</td></tr>
<tr><td>USE OF INFORMATION AND COMMUNICATION TECHNOLOGIES</td><td>- interactive tools
- e-class</td></tr>
<tr><td>MANAGEMENT OF TEACHING</td><td><table>
<tr><th>Activity</th><th>Semester Workload</th></tr>
<tr><td>Lectures</td><td>30</td></tr>
<tr><td>Workshops</td><td>20</td></tr>
<tr><td>Individual and work study for term assignment</td><td>100</td></tr>
<tr><td></td><td></td></tr>
<tr><td>Course Total</td><td>150</td></tr>
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<tr><td>STUDENT EVALUATION</td><td>Student assessment takes place at the end of the semester by means of written examination, following the completion of 13 classes, according to the Department schedule and contains essay questions.</td></tr>
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4. RECOMMENDED BIBLIOGRAPHY

Books offered to students through the *Eudoxus* platform:

- Stathis, D. 2015. Lessons in Forest Meteorology and Climatology. Hellenic Academic E-Books. (www.kallipos.gr) (Eudoxus code: 320359)
- Sachsamanoglou, X. and T.I. Makrogiannis. 1998. General Meteorology. Thessaloniki: Ziti Pelagia Publications. (Eudoxus code: 11399)

Books offered besides the *Eudoxus* platform:

- Heady H.F. and R.D. Child. 1994. Rangeland Ecology and Management. Westview Press, 519 p.
- Wallis de Vries M.F., J.P. Bakker and S.E. van Wieren. 1998. Grazing and Conservation Management. Kluwer Academic Publishers, pp. 374.

Scientific Journals:

- Agricultural and Forestry Meteorology
- Journal of Agricultural Meteorology