

## COURSE DISCRIPTION

### 1. GENERAL

<b>SCHOOL</b>	ENVIRONMENT, GEOGRAPHY AND APPLIED ECONOMICS		
<b>DEPARTMENT</b>	GEOGRAPHY		
<b>LEVEL OF COURSE</b>	Undergraduate		
<b>COURSE CODE</b>		<b>SEMESTER</b>	3F
<b>COURSE TITLE</b>	CLIMATE CHANGE		
<b>STRUCTURE OF TEACHING ACTIVITIES</b>		<b>TEACHING HOURS PER WEEK</b>	<b>NUMBER OF CREDITS ALLOCATED (ECTS)</b>
Lectures and Laboratory Classes		3	5
<b>TYPE OF COURSE</b>	Optional		
<b>PREREQUISITES</b>	-		
<b>LANGUAGE OF INSTRUCTION</b>	GREEK		
<b>COURSE OFFERED TO ERASMUS STUDENTS</b>	YES (in English if required)		
<b>(URL)</b>	<a href="http://meteoclima.hua.gr/images/stories/projects/kallipos/00_master_document_9926.r1.html">http://meteoclima.hua.gr/images/stories/projects/kallipos/00_master_document_9926.r1.html</a>		

### 2. EXPECTED LEARNING OUTCOMES

#### Learning outcomes

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

The course of Climate Change is an introductory course in the fields of climate variability, greenhouse effect and large-scale atmospheric phenomena. At the end of the course the student is expected to be able to understand the natural and anthropogenic impacts on the global climate, analyse the possible scenarios and their dynamical feedbacks. The practical session of the course provides fundamental knowledge on data analysis software while the laboratory work is essential for the learner in order to demonstrate its skills on climate data processing and various scenarios assessment. At the end of the course the student is expected to be able to understand the natural and anthropogenic impacts on the global climate, analyse the possible scenarios and their dynamical feedbacks. The practical session of the course provides fundamental knowledge on data analysis software while the laboratory work is essential for the learner in order to demonstrate its skills on climate data processing and various scenarios assessment.

### 3. COURSE CONTENTS

1. Differences on Climate change and climate variability
2. The radiation budget of the Earth
3. Natural and enhanced greenhouse effect

4. Scenarios of greenhouse gases emission
5. The land use change
6. ENSO and its impact on global climate
7. Large-scale forecasting methods
8. The Intergovernmental Panel on Climate Change
9. The Kyoto protocol and the contribution of Greece as an EU member

#### 4. TEACHING AND ASSESSMENT METHODS

<b>TYPE OF LECTURES</b>	In class lectures Laboratory Lectures and Practice	
<b>ICT USE</b>	ICT use, course website, interactive experiments, climate data and e-class	
<b>TEACHING STRUCTURE</b>	<b>Activity</b>	<b>Hours per semester</b>
	Lectures	33
	Laboratory	6
	Project	13
	Studying	75
	<b>TOTAL</b>	<b>127</b>
<b>ASSESSMENT METHODS</b>	<p>Assessment Language: Greek</p> <p>The basic assessment type of the course is the written examination at the end of the semester (3 hours). The final grade is estimated by the written examination and a final written paper on a case study with climate data based on the IPCC available scenarios.</p>	

#### 5. RECOMMENDED READING

Katsafados P. and E. Mavromatidis, 2015: "An Introduction to Atmospheric Physics and Climate Change". Digital textbook in the framework of the funded action "Kallipos", pp. 350 (in greek).