



COURSE OUTLINE

(1) GENERAL

SCHOOL	School of Technology		
ACADEMIC UNIT	Department of Environmental Sciences		
LEVEL OF STUDIES	Undergraduate		
COURSE CODE	AY504	SEMESTER	5th
COURSE TITLE	NATURAL HAZARDS		
INDEPENDENT TEACHING ACTIVITIES	WEEKLY TEACHING HOURS	CREDITS	
Teaching Hours	5	5	
COURSE TYPE	General background		
PREREQUISITE COURSES	None		
LANGUAGE OF INSTRUCTION and EXAMINATIONS	Greek		
IS THE COURSE OFFERED TO ERASMUS STUDENTS	No		
COURSE WEBSITE (URL)	https://eclass.uth.gr/courses/ENV_U_196		

(2) LEARNING OUTCOMES

Learning outcomes
<p>The course provides students with the basic background knowledge on the concepts of natural disasters and environmental risks at national and global level. The content of the course aims to introduce students to basic concepts regarding the types of risks such as geophysical, hydro-meteorological, biophysical, and technological hazards. Indicative examples include the decrease in surface water levels resulting in the disruption of ecosystems, floods, forest fires, etc. Natural hazards and disasters increasingly impact humans and the devastating effects of natural disasters are becoming more apparent. Upon successful completion of the course, students will have acquired specific knowledge, skills and competences, and will be able to:</p> <ul style="list-style-type: none"> • Understand basic concepts about natural disasters and environmental risks. • Utilize institutional tools of spatial planning and engineering projects to protect the built environment. • Utilize geospatial technologies to assess the risk and propose corresponding prevention measures for natural disasters and environmental risks. • Apply the knowledge gained in the course to solve relevant environmental problems.
General Competences
<ul style="list-style-type: none"> • Search for, analysis and synthesis of data and information, with the use of the necessary technology • Working independently • Team work • Respect for the natural environment • Production of free, creative and inductive thinking • Application of knowledge in practice

(3) SYLLABUS

<ul style="list-style-type: none"> • Classification of natural disasters (definitions, categories) - Differentiation of hazards and disasters – Modeling. • GIS and Remote Sensing integration in natural disasters and environmental risks. • Risk reduction; hazard and vulnerability assessment. • Hydro-meteorological Hazards: Storms and Hail, Floods (rainfall-runoff models, flash floods), Droughts and Desertification. • Biophysical Hazards: Frost and Heat waves, Forest Fires, Biological Hazards. • Geophysical Hazards: Landslides, Avalanches, Volcanoes and earthquakes. • Technological Hazards: Urban fires, oil spills, Chernobyl. • Management and Information Framework (International - National) for Natural Disasters. • Analysis and early warning systems – Emergency management and civil protection policy.
--

(4) TEACHING and LEARNING METHODS – EVALUATION

DELIVERY	Face-to-face	
USE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY	<ul style="list-style-type: none"> • Use of PowerPoint slides • Communication with students via e-mail • Use of asynchronous distance learning (e-class) 	
TEACHING METHODS	Activity	Semester workload
	Lectures	39
	Laboratory practice	26
	Study and analysis of bibliography	50
	Essay writing	10
	Course total (25 hours workload per credit)	125
STUDENT PERFORMANCE EVALUATION	<p>Students' performance is evaluated in the Greek language. The final grade is determined by:</p> <ul style="list-style-type: none"> • A mid-term written exam that contributes 10% to the final grade, applying one or more of the following evaluation methods: Multiple-choice questions, short-answer questions, problem-solving. • The preparation and presentation in class of an essay/report that contributes 20% to the final grade. • A written exam (at the end of the semester) that contributes 70% to the final grade, applying one or more of the following evaluation methods: Multiple-choice questions, short-answer questions, problem-solving. <p style="text-align: center;">Final Grade = 70% Exam Grade + 20% Assignment Grade + + 10% Mid-term Exam Grade</p>	

(5) ATTACHED BIBLIOGRAPHY

<ul style="list-style-type: none"> • Emanuel, K., Rondenay, S., Connor, J. (2010) <i>Science and Policy of Natural Hazards</i>. MIT Course Number 12.103 http://ocw.mit.edu/courses/earth-atmospheric-and-planetary-sciences/12-103-science-andpolicy-ofnatural-hazards-spring-2010/ • Lekkas, Ef. (2000) <i>Natural and Technological Disasters</i>. (in Greek) www.elekkas.gr/images/stories/pdfdocs/books/tk.pdf • Sapountzaki, K. & Dandoulaki, M. (2016) <i>Risks and Hazards</i>. Kallipos, Open Academic Editions. (in Greek)
