COURSE OUTLINE NATURAL AND TECHNOLOGICAL RISKS IN THE ERA OF CLIMATE CRISIS

1. GENERAL

SCHOOL	SCHOOL OF ENGINEERING		
DEPARTMENT	PREVENTION AND MANAGEMENT OF CRISIS AND DISASTERS: INNOVATIVE TECHNIQUES IN CIVIL PROTECTION		
LEVEL OF STUDIES	ISCED level 7 – Master's or equivalent level		
COURSE CODE	CP02	**SEMESTER**	1th Semester
COURSE TITLE	Natural and Technological Risks in the era of Climate Crisis		

TEACHING ACTIVITIES *If the ECTS Credits are distributed in distinct parts of the course e.g. lectures, labs etc. If the ECTS Credits are awarded to the whole course, then please indicate the teaching hours per week and the corresponding ECTS Credits.*	**TEACHING HOURS PER WEEK**	**ECTS CREDITS**
	3.0	6.0
Please, add lines if necessary. Teaching methods and organization of the course are described in section 4.		

COURSE TYPE *Background, General Knowledge, Scientific Area, Skill Development*	Scientific Area
PREREQUISITES:	NO
TEACHING & EXAMINATION LANGUAGE:	Greek, English
COURSE OFFERED TO ERASMUS STUDENTS:	YES
COURSE URL:	https://eclass.duth.gr/courses/

2. LEARNING OUTCOMES

Learning Outcomes

Please describe the learning outcomes of the course: Knowledge, skills and abilities acquired after the successful completion of the course.

At the end of the course, the student should be able to:

- *Identify and understand the various types of natural and technological hazards, as well as their underlying causes and mechanisms.*
- *Analyze the impacts of the climate crisis on the intensity and frequency of these hazards.*
- *Evaluate the consequences of hazards on human society and the natural environment.*
- *Apply disaster prevention and management methods, considering the contemporary challenges of the climate crisis.*
- *Utilize modern technologies and tools for monitoring and addressing natural and technological hazards.*

- *Develop adaptation strategies to changing environmental conditions, aiming to reduce community vulnerability.*
- *Collaborate effectively in interdisciplinary teams to solve problems related to hazards and disasters.*
- *Develop critical thinking regarding the policies and measures implemented to address hazards within the context of the climate crisis.*

General Skills

Name the desirable general skills upon successful completion of the module

Search, analysis and synthesis of data and information,	*Project design and management*
ICT Use	*Equity and Inclusion*
Adaptation to new situations	*Respect for the natural environment*
Decision making	*Sustainability*
Autonomous work	*Demonstration of social, professional and moral responsibility and sensitivity to gender issues*
Teamwork	*Critical thinking*
Working in an international environment	*Promoting free, creative and inductive reasoning*
Working in an interdisciplinary environment	
Production of new research ideas	

- Search, analyze, and synthesize data and information using appropriate technologies.
- Adaptation to new situations.
- Decision-making.
- Independent work.
- Teamwork.
- Working in an international environment.
- Working in an interdisciplinary environment.
- Project design and management.
- Respect for diversity and multiculturalism.

3. COURSE CONTENT

The purpose of the course is to provide students with the necessary knowledge and skills to understand, analyze, and manage natural and technological hazards, taking into account the contemporary challenges arising from the climate crisis.

More specifically, the course aims to:

- *Develop an understanding of natural and technological hazards, as well as the mechanisms that cause them.*
- *Analyze the impacts of climate change on the frequency and intensity of disastrous events.*
- *Develop strategies for prevention, preparedness, response, and recovery in the face of hazards, with an emphasis on sustainability and reducing societal vulnerability.*
- *Utilize modern technologies (such as GIS, satellite data, and predictive models) for hazard monitoring and management.*
- *Familiarize students with the regulatory framework and disaster management policies at the national, European, and international levels.*
- *Enhance critical thinking and decision-making skills, enabling students to evaluate and implement appropriate hazard management strategies.*

- *Foster collaboration in interdisciplinary and international environments, strengthening teamwork and coordinated action in crisis situations.*

4. LEARNING & TEACHING METHODS - EVALUATION

TEACHING METHOD *Face to face, Distance learning, etc.*	Face to face
USE OF INFORMATION & COMMUNICATIONS TECHNOLOGY (ICT) *Use of ICT in Teaching, in Laboratory Education, in Communication with students*	Use of ICT in Teaching Use of ICT in Communication with students
TEACHING ORGANIZATION *The ways and methods of teaching are described in detail.* *Lectures, Seminars, Laboratory Exercise, Field Exercise, Bibliographic research & analysis, Tutoring, Internship (Placement), Clinical Exercise, Art Workshop, Interactive learning, Study visits, Study / creation, project, creation, project. Etc.* *The supervised and unsupervised workload per activity is indicated here, so that total workload per semester complies to ECTS standards.*	

Activity	***Workload/semester***
Lectures	39
Assignments	60
Study and analysis of literature	78
Exams	3
Total	**180**

STUDENT EVALUATION *Description of the evaluation process* *Assessment Language, Assessment Methods, Formative or Concluding, Multiple Choice Test, Short Answer Questions, Essay Development Questions, Problem Solving, Written Assignment, Essay / Report, Oral Exam, Presentation in audience, Laboratory Report, Clinical examination of a patient, Artistic interpretation, Other/Others* *Please indicate all relevant information about the course assessment and how students are informed*	Student evaluation languages Greek English Method (Formative or Concluding) Summative Student evaluation methods Written Exams towards Solving a Problem 50% Relative use case compilation 50%

5. SUGGESTED BIBLIOGRAPHY

- Natural Hazards: Earth's Processes as Hazards, Disasters, and Catastrophes, Edward A. Keller και Duane E. DeVecchio
- Climate Change and Natural Disasters: Transforming Economies and Policies for a Sustainable Future, Vinod Thomas
- The Climate Crisis: An Introductory Guide to Climate Change, David Archer και Stefan Rahmstorf
- Use cases for Civil Protection. Manual Guide, Project RESISTANT (DG ECHO)