

MODULE DESCRIPTION

General

School	Geotechnical Sciences
Department	Forest and Natural Environment Sciences

Module Information

Title	Mitigating Hydrologic Disasters and Works – Methods of protection
Course Code	E.Y.6
Level of Studies	Bachelors
Teaching Period	5 th Semester
Attendance Type	Core - Mandatory
Prerequisites	Hydrogeomorphology and Hydrologic Disasters

Orientation	Weekly Hours		Year	Semester	ECTS
	Lectures	Laboratory work			
Management and protection of natural resources and Climate change	2	3	2 nd	5 th	4

Faculty Instructor

_____ Dimitrios Emmanouloudis – Professor / George Zaimes – Assistant Professor _____

Type of Module

- General Foundation
- Specific Foundation / Core
- Knowledge Deepening / Consolidation

Mode of Delivery

- Face to face
- Distance learning

Digital Module availability

- E-Study Guide
- Departments Website
- E-Learning

Language

	Teaching	Examination
Greek	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

English	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
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Erasmus

- The course is offered to exchange programme students

Learning Outcomes

The course teaches the basic methods for the sustainable management of torrents and hydrological disasters at the watershed scale in Greece.

The aim of the course is to understand the hydrological processes of torrents and hydrological disasters, their proper management for their utilization and the minimization of the risks of torrential and hydrological disasters.

Upon successful completion of the course the student will be able to:

- Management of torrents
- Mitigation of hydrological disasters
- Exploitation of torrents
- Minimizing the risks of torrents and hydrological disasters
- Technical protection and exploitation projects
- Nature-based solutions
- Development of an integrated intervention plan for the control of mountain surface waters and the suppression of hydrological disasters

List of General Competences

- Apply knowledge in practice
- Work autonomously
- Work in teams
- Work in an international context
- Work in an interdisciplinary team
- Respect natural environment
- Advance free, creative and causative thinking

Module Content (Syllabus)

Understanding the principles and systems of hydrology control, protective and mitigation systems, development of an integrated intervention plan for the control of mountain surface waters and hydrological disasters, water monitoring to prevent flooding in the lowlands. Emphasis is placed on hydrology projects, categories of control dams, sections of the dam, types of dams, control barriers, other technical control projects, agro-technical, plant-based materials, technical control structures, active forces and tensions on works, stability and dimensions of control works. Specifications and requirements for studies and constructions of control projects for mountainous waters and hydrological disasters.

Keywords: Torrent utilization, Hydrological disaster suppression, Technical works, nature-based solutions, Integrated intervention plans

Educational Material Types

- Book
- Notes
- Slide presentations
- Video lectures
- Multimedia
- Interactive exercises
- Other:

Use of Information and Communication Technologies

- Use of ICT in Course Teaching
- Use of ICT in Laboratory Teaching
- Use of ICT in Communication with Students
- Use of ICT in Student Assessment

Module Organization

Please fill in the workload of each course activity

Course Activity	Workload (hours)
Lectures	20
Laboratory work	25
Field Trip/Short Individual Assignments	30
Independent Study	25
Total	100

* 1 ECTS unit corresponds to 25 hours of workload

Student Assessment Methods

- Written Exam with Multiple Choice Questions
- Written Exam with Short Answer Questions
- Written Exam with Extended Answer Questions
- Written Assignment
- Report
- Oral Exams
- Laboratory Assignment

Suggested Bibliography (Eudoxus and additional bibliography)

1. Υδροδυναμικά έργα- Φράγματα, Τσόγκας Χρήστος, Τσόγκα Ελισάβετ, ΙΩΝ, 2009, Αθήνα
- 2.Τεχνικό Σχέδιο με AUTOCAD, Σαράφης Ηλίας, Τσεμπεκλής Σπύρος, ΔΙΣΙΓΜΑ, 2010, Θεσ/νικη