

812. MOUNTAINOUS WATER MANAGEMENT AND CONTROL II

Instructor: Teaching Staff with contract

1. GENERAL

FACULTY	PLANT SCIENCES		
DEPARTMENT	FORESTRY AND NATURAL ENVIRONMENT MANAGEMENT		
LEVEL OF STUDY	Undergraduate		
COURSE CODE	812	SEMESTER OF STUDY	8th
COURSE TITLE	MOUNTAINOUS WATER MANAGEMENT AND CONTROL II		
INDEPENDENT TEACHING ACTIVITIES		TEACHING WEEKS	CREDITS
Lectures		3	6
Laboratory exercises		2	
Total Course		5	
COURSE TYPE	Special Background		
PREREQUISITE COURSES:	No		
LANGUAGE OF INSTRUCTION AND EXAMINATIONS:	Greek		
THE COURSE IS OFFERED TO ERASMUS STUDENTS	No		
COURSE WEBSITE (URL)			

2. LEARNING OUTCOMES

Learning Outcomes
<p>The subject of the course is mountain water management projects (dams, cantilevers, retaining walls, etc.) that are built in the beds and catchment areas of streams.</p> <p>The aim of the course is to understand and transmit knowledge about mountain water settlement projects (technical, agro-technical and phytotechnical projects). Upon successful completion of the course, the student will be able to:</p> <ul style="list-style-type: none">• knows the basic principles for mountain water management projects,• study and evaluate the various categories of projects and know the issues of planning and implementation of project studies,• collaborates with his fellow students to create and present a plan – framework of part of a study of a dam or other hydrological project, which in the future in the course of his work as a Forester will be part of a study-plan of one hydrological study or another mountain water settlement project.
General skills
<ul style="list-style-type: none">• Search, analysis and synthesis of data and information, using the necessary technologies• Autonomous work• Teamwork• Project planning and management

- Respect for the natural environment
- Adaptation to new situations
- Decision making

Promotion of free, creative and inductive thinking

3. COURSE CONTENT

The material per week of the course - in theory and in corresponding laboratory exercises - has as follows:

Theory

- Purpose of the lesson. Chronology
- Introduction. General concepts. means and methods of Mountain Water Management (MOW).
- Technical works D.O.Y. Categories of these.
- Dams and their categories. Concrete dams.
- Auxiliary parts of dams, Spillways, dimensioning of dams
- Dam stability conditions
- Dam stability check
- Earthen, Wooden and other categories of dams
- Cantilevers, Parallel walls
- Stone embankments, Embankments, Technical works outside the river bed.
- Agricultural works
- Horticultural works

Laboratory

- Introduction to the laboratory.
- Flood capture.
- Design of river planing.
- Mecotomy design of the axis of the stream bed.
- Finding dam height and number of dams in stream arrangement. Placement of the dams in myectomy and horizontography.
- Cross-section design of the bed. Calculation of dam dimensions.
- Placing a dam in the cross-section of the bed.
- Section and plan design of the dam.
- Visit and demonstration of the works of the Klarotos stream.
- Checking the stability conditions of the dam (1st and 2nd condition).
- Checking the stability conditions of the dam (3rd and 4th condition).
- Summary of laboratory exercises - discussion.

4. TEACHING AND LEARNING METHODS – ASSESSMENT

DELIVERY METHOD	In the hall, in the Laboratory and in the Klaroto Karpenisiou stream, in the Karpenisiotis river and in watercourses close to the Department's facilities.	
USE OF INFORMATION AND COMMUNICATION TECHNOLOGIES	Use PowerPoint slides, use physical maps, communicate with students via video conferences, Open eClass, email, and telephone. Meetings with students per person to answer questions and prepare laboratory exercises.	
TEACHING ORGANIZATION	Activity	Semester Workload
	Lectures	50
	Laboratory Exercises	40
	Educational visits	10
	Personal study	50

	Total course (25 workload hours per credit unit)	150
STUDENT EVALUATION	I. Written or oral examination in the laboratory part of the course. II. The exam includes the development of equally graded development questions, or the resolution of exercises announced to students at the beginning of the course.	

5. RECOMMENDED-BIBLIOGRAPHY

- *Suggested Bibliography:*
Kotoulas, D., 1987. Stream arrangements I, II. University Studio Press, Thessaloniki.
Badar Md., 2006. Hydrogeomorphology: Fundamentals, Applications and Techniques.

- *Related scientific journals:*
Hydrological processes
Hydrology Research