ECTS

Course information in english

General course information:

Course title:	Water Resources Management	**Course code:**	CE08_H05
Credits:	5	**Work load (hours):**	90
Course level:	Undergraduate ☒	Graduate ☐	
Course type:	Mandatory ☒	Selective ☐	
Course category:	Basic ☐	Orientation ☒	
Semester:	G	**Hours per week:**	4
Course objectives (capabilities pursued and learning results):			
The students learn how to design water resources management projects, to calculate a water volumetric budget, to design water resources management plans at basin level.			
Prerequisites:			
• Hydraulics • Groundwater Hydraulics • Water supply systems • Hydrology			

Instructor's data:

Name:	Nikitas Mylopoulos
Level:	Professor
Office:	114
Tel. – email:	24210 74162 nikitas@uth.gr
Other tutors:	

Specific course information:

Week No.	**Course contents**	**Hours**	
		Course attendance	**Preparation**
1	Introduction – The water resources crisis	**4**	**1**
2	Water scarcity: Overview and analysis of the phenomenon	**4**	**1**
3	Water Demand Management. Cost accounting and pricing	**4**	**1**

4	Introduction to the design and analysis of water resources systems. Analysis methods. Objectives for water resources design.	**4**	**1**
5	Design models. Decision models, The Decision Analysis Method	**4**	**1**
6	Optimisation methods. Linear Programming	**4**	**1**
7	Optimisation methods. Integer Programming	**4**	**2**
8	Optimisation methods. Dynamic Programming	**4**	**2**
9	Optimisation methods. Non Linear Programming.	**4**	**2**
10	Probabilistic approach, stochastic simulation and time series.	**4**	**2**
11	Conjunctive use of surface and groundwater resources.	**4**	**2**
12	Optimisation methods software.	**4**	**2**
13	Application for an integrated management study at the level of the hydrologic basin	**4**	**2**
14	Application for an integrated management study at the level of the hydrologic basin	**4**	**2**

Additional hours for:			
Class project	**Examinations**	**Preparation for examinations**	**Educational visit**
5	3	4	

Suggested literature:

1. N. Mylopoulos, "Water Resources Management", University of Thessaly
2. D. Tolikas, "System analysis", Aristotle University of Thessaloniki

Teaching method *(select and describe if necessary* - **weight***):*		
Teaching	☒ Lectures covering the theoretical part of the course	50%
Seminars	☐	…….%
Demonstrations	☐	…….%

Laboratory	☐	…….%
Exercises	☒ Solving of exercises – practical applications	50%
Visits at facilities	☐ Municipal water authorities – Reservoirs – Work site of pipe placing	%
Other *(describe):* 1. Students make a presentation on a modern water crisis problem based on internet data 2. Students solve an optimization project. Lecturer corrects the project giving advice concerning the proper way of designing	☒	beyond teaching hours
Total		100%

Evaluation method *(select)*- **weight:**				
	written	*%*	*Oral*	*%*
Homework	☐		☐	
Class project	☒	20	☐	
Interim examination	☐		☐	
Final examinations	☒	80	☐	
Other *(describe):* ……	☐		☐	