

COURSE OUTCOME

ΔΠΥ711 – MOUNTAIN HYDRONOMICS

1. GENERAL

INSTITUTION	University of Thessaly		
SCHOOL	Technology		
DEPARTMENT	Forestry, Science of Wood and Design		
LEVEL	<i>Undergraduate</i>		
CODE	ΔΠΥ711	STUDENT SEMESTER	7th
COURSE TITLE	MOUNTAIN HYDRONOMICS		
ACTIVITIES		WEEKLY HRS	ECTS
	Theoretical Part	2	6
	Exercises	1	
		3	6
TYPE OF COURSE	Mandatory Core Course		
PREREQUISITES:	none		
LANGUAGE TEACHING AND EXAMINATION:	Greek		
THE COURSE OFFERED TO STUDENTS ERASMUS	No		
WEBPAGES COURSE (URL)			

2. LEARNING OUTCOMES

Learning Outcomes
<p>The aim of the course is for the students to gain the necessary knowledge on:</p> <ul style="list-style-type: none"> • the hydrological processes of water in nature • the development of management strategies and the adoption of a holistic approach to water management. • the development of initiatives, frameworks and contracts at the river watershed level with the aim of sustainable development, • development and use of geographic information systems, decision support systems and climate models to optimize water resources management, hydrologic and hydraulic projects, investigation of water quality, hydroelectric power, reservoir management and conservation and the sustainable protection of water systems • the movement of water in torrents • the effect of vegetation on the hydrologic cycle • the impact of torrents on the wider environment • the basic principles of torrent management • The basic principles of the construction of small dams.
General Skills
<p>Upon successful completion of the course, the students will be able to develop and cultivate basic professional and social skills:</p> <ul style="list-style-type: none"> • Search, analysis and synthesis of data and information, using the necessary technologies • Adaptation to new situations • Teamwork

- Decision making
- Demonstration of social, professional and moral responsibility
- Work in an interdisciplinary environment
- Respect for the natural environment
- Work in an international environment
- Promoting free, creative and inductive thinking
- Production of new research ideas
- Production of new ideas

3. COURSE CONTENT

Description of the theoretical part:

- data (origin and structure) used as input data in order to achieve the various hydrologic processes.
- processes of checking the homogeneity of meteorological data as well as the completion and extension of these time series.
- creation of layers using geographic information systems and geostatic methods of creating layers
- critical ability (analysis) when using it as input to various hydrologic processes.

Laboratory part description:

- Modeling of evapotranspiration using information systems
- Modeling of infiltration utilizing various differential equations,
- Hydraulic roughness and how to calculating it
- Modeling of various hydrological processes, non-automatic hydrologic modeling at the watershed level.
- Principles of small dam construction of small dams

4. TEACHING AND LEARNING METHODS - EVALUATION

DELIVERY METHOD	An application of combined educational methods and techniques in order to enhance the active participation of students in the course with the aim at the greatest possible effectiveness in "face to face" teaching: Lectures (in the amphitheater) enriched with real examples, questions - answers and discussion.	
USE OF INFORMATION AND COMMUNICATION TECHNOLOGIES	<ul style="list-style-type: none"> • Use of computers, PowerPoint presentations, projector, videos of small duration. • Support of the educational process through the electronic platform e-class. 	
MANAGEMENT OF TEACHING	Activity	Semester Workload
	Lectures	26
	Seminars	13
	Studio workshops	11
	Individual and work study for term assignment	50
	Term assignment presentation	50
	Course Total	150
STUDENT EVALUATION		

	<p>Essay and Public Presentation of a complete business idea.</p> <p>Formative and overall evaluation procedures are applied.</p> <p>Application of formative and overall evaluation procedures.</p> <p>The evaluation of the theoretical part of the course is done in two phases: a) in the middle of the semester (6th -7th week) a written midterm exam is held (students' participation is optional), which includes essay questions, b) at the end of the semester (after the implementation of 13 courses) a final exam is held, according to the examination program of the Department, which also includes essay questions.</p> <p>The evaluation of the laboratory part of the course is done through: a) the written assignments that are prepared in groups, after the implementation of each laboratory exercise, and are delivered on a weekly basis.</p>
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5. RECOMMENDED-BIBLIOGRAPHY

Available at EUDOXOS

- Σαχπάζης Κ. 2018. Γεωτεχνική μηχανική των φραγμάτων. Εκδόσεις: Τσαπραίλη Χρυσάνθη. (Κωδ. ΕΥΔΟΞΟΣ: 77120847)
- Μάρης Φ., Παπαρίζος Σ., και Καράτζιος Γ. 2014. Υδρογεωπληροφορική - Μοντελοποίηση και Πληροφοριακά Συστήματα Διαχείρισης Υδάτινων Πόρων. Εκδόσεις ΔΙΣΙΓΜΑ ISBN: 978-960-9495-43-1 (Κωδ. ΕΥΔΟΞΟΣ: 77112328)

Not available at EUDOXOS

- Κωτούλας Δ. 1979. Διευθετήσεις χειμαρρωδών ρευμάτων, Μέρος Ι, Θεσσαλονίκη.
- Κωτούλας Δ. 1981. Διευθετήσεις χειμαρρωδών ρευμάτων, Μέρος ΙΙ, Θεσσαλονίκη.