

COURSE OUTLINE

1. GENERAL

SCHOOL	School of Engineering		
DEPARTMENT	Department of Civil Engineering/ Master Program 'Hydrometeorological Disasters Program		
LEVEL OF STUDIES	7		
COURSE CODE	ΕΥΑΠΚΠ	SEMESTER	2 nd
COURSE TITLE	Urban infrastructure works and floods (sewage network, floods and waste)		
TEACHING ACTIVITIES <i>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.</i>		TEACHING HOURS PER WEEK	ECTS CREDITS
Lectures		3	6
<i>Please, add lines if necessary. Teaching methods and organization of the course are described in section 4.</i>			
COURSE TYPE <i>Background, General Knowledge, Scientific Area, Skill Development</i>	Scientific Area		
PREREQUISITES:	NO		
TEACHING & EXAMINATION LANGUAGE:	Greek/ English		
COURSE OFFERED TO ERASMUS STUDENTS:	NO		
COURSE URL:	https://eclass.duth.gr/courses/1021376/		

2. LEARNING OUTCOMES

Learning Outcomes <i>Please describe the learning outcomes of the course: Knowledge, skills and abilities acquired after the successful completion of the course.</i>	
Once the course is completed, participants will be able to:	
<ul style="list-style-type: none"> Describe the procedures necessary for the analysis and design of urban water supply systems, water distribution systems, drainage and drainage systems, as well as waste water treatment facilities. Evaluate the impact of urban water systems on the receiving environment. Analyze an integrated model of urban water systems and judge between different multifunctional measures that can be implemented. 	
General Skills <i>Name the desirable general skills upon successful completion of the module</i>	
Search, analysis and synthesis of data and information, ICT Use Adaptation to new situations Decision making Autonomous work Teamwork Working in an international environment Working in an interdisciplinary environment Production of new research ideas	Project design and management Equity and Inclusion Respect for the natural environment Sustainability Demonstration of social, professional and moral responsibility and sensitivity to gender issues Critical thinking Promoting free, creative and inductive reasoning
<ul style="list-style-type: none"> Search, analysis and synthesis of data and information Production of new research ideas 	

- Project design and management
- Respect for the natural environment
- Promoting free, creative and inductive reasoning

3. COURSE CONTENT

1. Water Systems: In General, Water Networks.
2. Water abstractions: General, Rainwater, Surface water, Underground water.
3. Legislation & Water Management: Legislation, River Basin Management Plans (RBMPs), Flood Risk Management Plans (RBMPs)
4. Constructed Wetlands
5. Artificial wetlands for urban runoff treatment
6. Process of modeling and modeling tools available and currently used for urban water systems.
7. Applications of modeling systems are made in practical problems such as improving the performance of systems, controlling leakage in water distribution networks, rehabilitating sewage systems, analyzing treatment operations and minimizing the impact of overflowing drains in receiving waters. Use of a range of supportive tools, illustrated with practical cases.

4. LEARNING & TEACHING METHODS - EVALUATION

TEACHING METHOD <i>Face to face, Distance learning, etc.</i>	Distance learning	
USE OF INFORMATION & COMMUNICATIONS TECHNOLOGY (ICT) <i>Use of ICT in Teaching, in Laboratory Education, in Communication with students</i>	Use of ICT in Teaching, and Communication with students <ul style="list-style-type: none"> • Digital slides • videos • MsTeams/ e-class, webmail 	
TEACHING ORGANIZATION <i>The ways and methods of teaching are described in detail.</i> <i>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.</i> <i>The supervised and unsupervised workload per activity is indicated here, so that total workload per semester complies to ECTS standards.</i>	Activity	Workload/semester
	Lectures	39
	Final project	60
	Bibliographic research & analysis	78
	Final examination	3
	TOTAL	180
STUDENT EVALUATION <i>Description of the evaluation process</i> <i>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</i> <i>Please indicate all relevant information about the course assessment and how students are informed</i>	Written Assignment, 50% Final Examination 50%	

5. SUGGESTED BIBLIOGRAPHY

1. Δ. Κουτσογιάννης, Σχεδιασμός Αστικών Δικτύων Αποχέτευσης, ΕΜΠ, Αθήνα, 2011.
2. Χ. Τσόγκας, Δίκτυα αποχέτευσης και επεξεργασία λυμάτων, Ιων, 1998.
3. Α. Λαγκούσης, Ν. Φουρνιώτης, Στοιχεία Σχεδιασμού Έργων Ύδρευσης και Αποχέτευσης, GOTSIS, 2020.
4. Παντοκράτορας, Α. (2014). Υδρεύσεις Πόλεων. Εκδόσεις Επίκεντρο Α.Ε.
5. Κωτσόπουλος, Σ. (2013). Υδρεύσεις. Εκδόσεις Μαρία Μάρκου & ΣΙΑ
6. Τσακίρης Γ., Υδραυλικά Έργα, Σχεδιασμός και Διαχείριση, 2010. εκδόσεις «Συμμετρία», Αθήνα.

ANNEX OF THE COURSE OUTLINE

Alternative ways of examining a course in emergency situations

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Supervisors: (1)	YES
Evaluation methods: (2)	Written Assignment, 50%, Final Examination 50%
Implementation Instructions: (3)	<p>Oral remote examination will take place on the day and time indicated in the Department's examination program.</p> <p>The oral test will be conducted by MS TEAMS.</p> <p>Students will enter a joint conference scheduled day and time.</p> <p>The examination link will be sent via teachers.duth.gr to the institutional accounts of the enrolled students who have declared their intention to participate in the examination, having received knowledge and accepted the terms of the remote examination, and will be announced on eClass.</p> <p>Students will have to connect to the videoconference via their institutional account, otherwise they will not be able to participate in the process. In addition, they will participate in the camera examination which will be open throughout. Prior to the start of the examination, the students will show their identity on the camera in order to be identified by the supervisors.</p> <p>The students will be examined in the Semester Work entrusted to them, according to the instructions for its preparation.</p> <p>In the week before the examination, by the specified date and time, students should have submitted through eClass all of the deliverables of the Semester Work as described in its opinion.</p> <p>The deliverables of each student should be submitted through a single file. Students should therefore, prior to submitting their work, arrange to consolidate all of their deliverables into a single file of *.zip format or other format allowed by the system.</p> <p>In the event of serious failure or destruction of the computer system, the test will be repeated when conditions permit</p>