

COURSE OUTLINE

1. GENERAL

SCHOOL	APPLIED SCIENCES		
DEPARTMENT	ENVIRONMENTAL ENGINEERING (DIVISION OF ENVIRONMENTAL GEOTECHNOLOGY ENGINEERING)		
LEVEL OF STUDY	UNDERGRADUATE		
COURSE UNIT CODE	GE5560	SEMESTER OF STUDY	5th
COURSE TITLE	Applied Hydraulics		
COURSEWORK BREAKDOWN		TEACHING WEEKLY HOURS	ECTS Credits
Theory - lectures		3	5
Laboratory exercises		1	
Total (hours)		4	
COURSE UNIT TYPE	SBC		
PREREQUISITES :	Non		
LANGUAGE OF INSTRUCTION/EXAMS:	Greek/English		
COURSE DELIVERED TO ERASMUS STUDENTS	YES		
MODULE WEB PAGE (URL)	http://geope.teiko.gr/undergraduate/ug_studies.htm		

2. LEARNING OUTCOMES

Learning Outcomes
On successful completion of this module the learner will be able to Deal with problems that deal with Applied Hydraulics on soil and structures.
General Skills
<p><i>Upon successful completion of the programme students will:</i></p> <ul style="list-style-type: none"> <i>-have the basic theoretical and practical knowledge in the fields of the subject area of Geotechnology and Environmental Engineering</i> <i>-be able to properly apply the theoretical and practical knowledge acquired during the study period</i> <i>-be able to cover a wide spectrum of scientific and technical knowledge related to mining and geotechnical projects as well as the sector of environmental reclamation</i> <i>-have gained the necessary competencies to proceed to their second cycle study.</i>
Technical general knowledge that is related with the deal of water underneath, in, or around structures or within soil.

3. COURSE CONTENTS

Introduction. Fluid properties and Fluid Flow. Hydrostatics. Kinematics. Linear and angular momentum theorems, Euler equations, Fluid energy Compressible flow. Flow measuring instruments and apparatus. Prandtl equation. Similarity and dimensional analysis. Flow through pipes and ducts, wall roughness. Flow through channels Open Flow equations. Flow through porous media Introduction to groundwater flow.

4. TEACHING METHODS - ASSESSMENT

MODE OF DELIVERY	At class	
USE OF INFORMATION AND COMMUNICATION TECHNOLOGY		
TEACHING METHODS	<i>Method description</i>	<i>Semester Workload</i>
	lectures	13
	<i>Exercises</i>	26 in theory + 13 at laboratory
	<i>Group work</i>	
	<i>Educational visit to industries</i>	
	<i>Atomic workout</i>	
	ATOMIC WORKOUT FOR ALL STUDENTS	44
	<i>Personal study</i>	39
	Total (ects credits * 25)	125
ASSESSMENT METHODS	<ul style="list-style-type: none"> • Written final examinations in theory (50 %) • Written final examinations at laboratory (50 %) (50% exams and 50 % atomic workout). 	

5. RESOURCES

Choice 1 Book title: Εφαρμοσμένη Υδραυλική, «*Eudoxus*» book code: **11029** Edition: 1997, Writer: Τερζίδης Γεώργιος, ISBN: 960-431-405-X, Distributor (Edition): Ζήτης

Choice 2 Book title: Μαθήματα Υδραυλικής 1, «*Eudoxus*» book code: **11087**, Edition: 1993, Writer: Τερζίδης Γεώργιος, ISBN: 960-431-262-6, Distributor (Edition): Ζήτης

Choice 3 Book title: Εφαρμοσμένη Υδραυλική, «*Eudoxus*» book code: **22817993**, Edition: 2012, Writer: Στάμου, Α., ISBN: 960-491-068-X, Distributor (Edition): Παπασωτηρίου

SBC: Specific Background Courses