

## Course title: Hydrogeology

Course Basic Information			
<b>Academic Unit:</b>	Faculty of Civil Engineering		
<b>Course title:</b>	Hydrogeology		
<b>Level:</b>	Bachelor		
<b>Course Status:</b>	E		
<b>Year of Study:</b>	Third (III) ; Semester VI		
<b>Number of Classes per Week:</b>	2+1		
<b>ECTS Credits:</b>	3		
<b>Time /Location:</b>	According to the timetable		
<b>Teacher:</b>	Prof. Assoc. Dr. Naim Hasani		
<b>Contact Details:</b>	tel. 044 345 508 E-mail: naim.hasani@uni-pr.edu		
<b>Course Description:</b>	Hydrogeology is a branch of earth sciences that deal with the movement and storage of water in the Earth's crust and other rocky bodies on earth, so the course will also treat the flow of water and the phenomena that are caused by the flow occurring in the earth's crust and rocky bodies. The course will treat from the beginning the water cycle to the aquifers, the principles of underground flow and flow in the wells, infiltration and recharging. Also, the part of the water chemistry and the tracing of the water into the environment will be treated		
<b>Course Goals:</b>	This course aims to provide an overview of the hydro geological processes in environment. We will also review basic theoretical analysis and methods used in field hydrogeology		
<b>Expected Learning Outcomes:</b>	Upon completing this course the students must be in condition to: 1.Understanding physical factors controlling transport Groundwater in porous media 2.Environmental impact on water movement and options for exploitation 3.Basic knowledge on solving practical problems in the field of protection and exploitation of groundwater		
Student Workload (should be in compliance with student's Learnign Outcomes)			
Activity	Hours	Day/Week	Total
Lectures	2	15	30
Practical work	1	15	15
Contacts hours with teacher			8

Consultations during office hours			
Field work	3	2	6
Colloquium, seminars	4	2	8
Homework	2	4	8
Self-study time (in the library or at home)	1	10	10
Final exam reparation	3	6	18
Evaluations (tests, quizzes, final exam)	2	2	4
Projects, presentations, etc.	2	1	2
<b>Total</b>			<b>109</b>
<b>Teaching Methods:</b>	Lecture, exercises, field visits and seminar work		
<b>Assessment Methods:</b>	Evaluation methods will be as follows: First evaluation 25 % Second evaluation 25 % Homework or other commitments 10 % Regular attendance 10 % Final exam 30 % Total 100 %		
<b>Primary Literature:</b>	[1] Hidrogeologjia II, H.Dakoli ,Tiranë, 1997 [2] Applied Hydrogeology, C.W. Fetter, 4th Edition, Prentice Hall, 2001		
<b>Additional Literature:</b>	[1] Chemical and Isotopic Groundwater hydrology, Emanuel Mazor,2004		
<b>Designed teaching plan</b>			
<b>Week</b>	<b>Title of the Lecture</b>		
Week 1:	Introduction / Hydrology and Hydrography		
Week 2:	Elements of the hydrological cycle		
Week 3:	Properties of the aquifers		
Week 4:	Porosity, Conductivity, Water table, Darcy Experiment		
Week 5:	The main principles of groundwater flow. Dary Law		
Week 6:	Groundwater flow equation		
Week 7:	Groundwater flow to Wells		
Week 8:	Determination of hydraulic parameters of wells		
Week 9:	Infiltration and recharging of groundwater		
Week 10:	Water chemistry		
Week 11:	Water quality and groundwater contamination		
Week 12:	Tracker of underground water		
Week 13:	Groundwater development and Management		
Week 14:	Methods and field evaluation of hydrogeological parameters		
Week 15:	Groundwater Models		

## **Academic Policies and Code of Conduct**

*Regular attendance of exercises and lectures.*

*Silence during the teaching process*

*Mobile phones and other communication tools will be forbidden*

*Timely entering at lecture hall and well prepared with teaching materials*