

COURSE IDENTIFICATION FORM

Course Code and Name: IM5032 STATISTICAL METHODS IN HYDROLOGY

Department of : CIVIL ENGINEERING / CIVIL ENGINEERING DEPARTMENT / HYDRAULICS MASTER'S PROGRAM WITH THESIS

Semester	Theoretic Hour	Practice Hour	Total Hour	Credits	ECTS	Education Language	Type: Compulsory Elective
Fall	3	0	3	3	5	Turkish	Optional
Prerequisite (s)							
Instructor		Assist. Prof. Meral KORKMAZ				Mail : meralkorkmaz@munzur.edu.tr Web :	
Course Assistant						Mail : Web :	
Groups / Classes							
Course Aim		Since many variables of civil engineering are of random character, the aim of this course is to teach the concepts of probability theory and statistics related to water engineering. It also aims to consider the effects of uncertainty in the planning, design and operation of systems, to teach Bayes theorem and Bayesian decision theory and to provide the use of time series in water engineering. Teaching modeling in water resources is also among the important objectives of the course.					
Course Goals		<ul style="list-style-type: none">• To comprehend the effect of uncertainties by adapting probability theory and statistical methods to water engineering.• Focus on water resources modeling techniques and time series analysis					
Course Learning Outs and Proficiencies		<ul style="list-style-type: none">• Students learn mathematical modeling of engineering problems.• Students learn the types and rules of modeling specific to different engineering problems.					
Course Basic and Auxiliary Contexts		Ang, H-S.A., Tang, W.H., Probability Concepts in Engineering:Emphasis on Applications to Civil and Environmental Engineering, John Wiley and Sons, 2006. Box, G.E.P., Jenkins, G.C.R., Time Series Analysis: Forecasting and Control, Wiley Series,2008.					

- Bayazıt, M., İnşaat Mühendisliğinde Olasılık Yöntemleri, İTÜ İnşaat Fak. Matbaası, 1996.

Methods of Give a Lecture

This course will be conducted in an **online format and face to face**.

Assessment Criteria		If Available, to Sign (x)	General Average Percentage (%) Rate
	1. Quiz	X	30
	2. Quiz		
	3. Quiz		
	4. Quiz		
	5. Quiz		
	Oral Examination		
	Practice Examination (Laboratory, Project etc.)	X	20
	Final Exam	X	30
Semester Course Plan			
Week	Subjects		
1	Basic Probability Concepts		
2	Total Probability and Bayes Theorem		
3	Bayesian Decision Theory		
4	Markov Chains		
5	Introduction to Statistics		
6	Estimation of Parameters		
7	Frequency Analysis		
8	Midterm Exam		
9	Confidence Interval		
10	Hypothesis Testing		
11	Distribution Functions and Tests		
12	Variance Analysis		
13	Correlation and Regression		
14	Time Series		

