



MEHRAN UNIVERSITY OF ENGINEERING AND TECHNOLOGY

FRM-001/00QSP-004

TENTATIVE TEACHING PLAN

Dec.01.2001

DEPARTMENT/INSTITUTE/DIRECTORATE: CIVIL ENGINEERING

Name of Teacher: **Prof. Dr. Khalifa Qasim Laghari** Batch: **21CE(A+C)** Year: **3rd** Semester: **5th**Subject: **Hydrology**Course Code: **CE362**Semester Starting Date: **20-11-2023**Semester Suspension Date: **29-03-2024**

Course Learning Outcomes (CLOs):

Upon successful completion of the course, the student will be able to:

CLO No.	Description	Taxonomy Level	Associated PLO
1	EXPLAIN hydrologic processes, their measurements and computations.	C2	1
2	ANALYZE the occurrence, movement and distribution of water in the atmosphere, at the ground surface and within subsurface	C4	4

S. #	TOPICS	CLO's	No. of Lec. Req.
Introduction & Hydrologic Measurements and Data Sources			
1.	Introduction of Hydrology, Hydrologic cycle, Importance and scope of hydrology	1	2
2.	Water balance equation,	1	1
3.	World's fresh water resources	1	1
4.	Hydrologic measurements, Data networks, Telemetry systems and Remote sensing	1	2
Water Resource Management			
5.	Water resources of Pakistan	1	1
6.	Indus basin irrigation system (IBIS)	1	1
7.	Indus water treaty 1960	1	1
8.	water accord 1991	1	1
9.	Indus river system authority (IRSA)	1	1
10.	Planning and development of water resources projects, The future of water resources	1	1
Hydrologic Processes and their Computation			
11.	Precipitation, its measurement and computation	1	3
12.	Runoff, its measurement and computation estimation	1	3
13.	Hydrograph, Unit hydrograph their analysis and application	1	3
14.	Transpiration and Evapotranspiration, Factors affecting evaporation and transpiration and measurement of evaporation	1	2
Floods- Estimation, Routing and Control			
15.	Introduction to Hydrological Modelling	1	1
16.	Floods and its causes, Methods to estimate floods, Return period and its estimation, Flood Frequency analysis.	1	1
17.	Size of floods, Estimation of peak flood, Flood frequency studies.	1	1
18.	Methods of flood control, Flood forecasting and warning	1	1
Sea water Intrusion			
19.	Introduction, consequences and remedies to sea water intrusion	1	2
Groundwater			
20.	Introduction, Sources and discharge of ground water,	2	3
21.	Water table and artesian aquifer, Types of aquifers	2	3
22.	Well hydraulics, pumping test, well losses, Yield of a well	2	3
23.	Specific capacity of a well	2	2
24.	Interference among wells/well spacing,	2	3
25.	Tube wells, Tube well technology, Types and Construction of tube well	2	3
26.	Comparison of tube well irrigation and canal irrigation.	2	2
TOTAL			48

Signature of Teacher:

Dated: 18/11/2023

Remarks by DMRC: **APPROVED**

Signature of Chairman:

A handwritten signature in blue ink, featuring a circled 'K' at the top left and the name 'Kishan' written below it. The signature is underlined with two parallel lines.

Dated: 21/12/2023