MEHRAN UNIUVERSITY OF ENGINEERING AND TECHNOLOGY

FRM-001/00QSP-004
Dec.01.2001

TENTATIVE TEACHING PLAN

DEPARTMENT/INSTITUTE/DIRECTORATE: Civil Engineering

Department: **Civil Engineering**
Name of Teacher: **Prof. Dr. Ashfaque A. Memon**
Subject: **Hydrology** Course Code: **CE362**
Batch: **21CE (B+D)** Year: **3rd** Semester: **5th**
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	Linking to PLOs
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	No. of Lecture Required
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.	Types of aquifers: Water table and artesian aquifer	2	3
22.	Well hydraulics and yield of a well, pumping test	2	3
23.	Well losses and 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: 12/12/2023

Remarks by DMRC: **APPROVED**

Signature of Chairman:  Dated: 21/12/2023