

COURSE CODE: ENS-448
COURSE NAME: Hydrology
CREDIT HOURS: Theory = 3 Practical = 0 Total = 3
CONTACT HOURS: Theory = 48 Practical = 0 Total = 48
PREREQUISITE: None
MODE OF TEACHING: Three hours of lecture per week

COURSE DESCRIPTION:

Understanding hydrology and its systems in environmental science, surface and groundwater and its applications.

TOPICS COVERED:

Week#	Topics
1	Principles of Hydrology
2	Surface water origin, Occurrence, Distribution and movement
3	Hydrologic Cycle
4	Hydrographs
5	Precipitation, Evaporation, Infiltration
6	Run-off and its types
7	Basic equations
8	Stream flow measurements
9	Midterm Exam – MSE
10	Groundwater Balance, Ground water exploitation and management
11	Surface Groundwater interaction
12	Ecosystem dependence
13	Water Balance
14	Rainfall recharge
15	Erosion and silting
16	Waterlogging and Salinity problems in Pakistan

17	Waterlogging and Salinity problems in Pakistan
18	End Semester Exam

Text and Material:

1. Environmental Hydrology 3rd Edition by Andy D. Ward, Stanley W. Trimble, Suzette R. Burckhard and John G. Lyon, CRC Press, 2015
2. Groundwater Hydrology 3rd Edition (2010) by David K. Todd And Larry W. Mays, Wiley

ASSESSMENT SYSTEM:

Theoretical/Instruction	100%
Assignments	10%
Quizzes	15%
Mid Semester Exam	25%
End Semester Exam	50%

Practical Work	0%
Lab Attendance	0%
Lab Report	0%
Lab Quiz	0%
Lab Rubrics	0%