MEHRAN UNIVERSITY OF ENGINEERING AND TECHNOLOGY JAMSHORO
Department of Civil Engineering

LESSON PLAN

COURSE TITLE: **Environmental Engineering-I**	COURSE CODE: **CE351**	CREDIT HOURS: **02**	MINIMUM CONTACT HOURS: **32**
COURSE INSTRUCTOR: **Prof. Dr. Ashfaque Ahmed Pathan (A+B+C+D)**			
Batch: **21CE**	Semester: **6th**	Semester Starting Date: **15-07-2024**	Semester Suspension Date: **06-11-2024**

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

CLO	Description	Taxonomy Level	PLO
1	DESCRIBE the characteristics of potable water used in daily life, environmental legislations and management.	C2	1
2	EVALUATE the water treatment plant unit and water distribution networks.	C5	4

LESSON CONTENTS AND ASSOCIATED CLO(s)

Contents	CLO No.	Marks Assigned	Delivery Methods	Assessment Methods (Marks)
• **Introduction to Environmental Engineering:** Overview of the subject, Importance of EE in Civil Engineering and Basic concepts. • **Water Supply Engineering:** Water demand, Estimation of water per capita demand, Factors affecting water use, Design periods and factors governing design periods, Methods of population forecast, Water sources. • **Water Quality:** Hydrological cycle, Sampling methods, Water characteristics, Water quality analysis, Water quality monitoring. • **Environmental Legislation and Management:** Environmental issues of urban and rural areas, Environment and sustainable development, Role of various environmental agencies to prevent environmental degradation, National Environmental Quality Standards (NEQS). Environmental Impact Assessment (EIA). • **Total No. of Lectures: 16**	**1**	**25**	• Class Lectures • Discussion	• Class Test (05) • Mid semester Exam (10) • Final Exam (10)

• **Water Treatment Unit Processes/ Operations:** Standard water treatment methods: Screening, Sedimentation, Coagulation, Filtration and Disinfection, Water softening, Special water treatment methods • **Water Distribution:** Water supply system, Water distribution methods: requirements of a good distribution system. • **Water Supply Projects and Water Collection:** Importance and necessity of planned water supplies, Planning and preparing a water supply project: data to be collected, analysis of data and project formulation, project drawings, project estimates, project supervision and reporting. Water collection methods, Intakes, factors governing location of intake, types of intake, design of intake. • **Water Conveyance:** Conduit and its types, Pumps, types of pumps and designof a pumping station. • **Design of Water Treatment Plant:** Design of various water treatment unitoperations. **Total No. of Lectures: 16**	**02**	**25**	• Class Lectures • Discussion • Design Practice	• Assignment (05) • Final Exam (20)

ASSESSMENT DETAILS

S. No.	Assessment Activities	Marks	Activities		CLO(s) to be assessed
1	Class Test/Assignment	**10**	Assignment(s)	1	2
			Class test(s)	1	1
2	Mid Semester Exam	**10**	1		1
3	Final Semester Exam	**30**	1		1, 2

Prepared by: **Prof.Dr. Ashfaque Pathan** Signature: Dated: 29-05-2024	Reviewed by: **Curriculum Review Committee** Signature: Dated: 30-05-2024	Approved by: **Chairman, CED** Signature: Dated: 30-05-2024