

Subject: Environmental Engineering

CHE-	Subject:	3CH	
453	Environmental Engineering	Theory+Lab (3+0)	
Pre-req.	Nil	Category	Foundation Course
Course Contents as per PEC Guidelines 2023-2024			
Basic Concepts: Introduction to environment and ecology, pollution concept, types of pollution. Environmental national and international policy and standards. Environmental Monitoring (gas, liquid, solids): Sampling and monitoring mechanism, Design and types of samples, Pre-sampling requirements/information, sampling. Pollution Control and Treatment Techniques: Air pollution control technologies, water pollution control technologies, water treatment technologies, sub-soil / pollution control technologies, noise pollution control technologies, cleaner production and zero emissions, Biotechnology for environment, industrial pollution control; covering design, sizing and operation. Climate Change: Global warming and climate change, Different Weathers, Earth's climate system, types and influencing Factors, Greenhouse effect, Energy use and carbon emissions, Effect and Importance of climate on environment, Impacts of climate changes on human life and environment, History and data analysis of climate changes, Controls of climate changes, UNO action plan of climate changes. Assessment Techniques: Principles and purposes of IEE and EIA and its significance for society, Main stages in EIA process. Public consultation and participation in EIA process. EIA methods and techniques for impact prediction and evaluation. Environmental standards.			

Weekly plan/ Reference Books	
1	Basic Concepts: Introduction to environment and ecology, pollution concept, types of pollution. Environmental national and international policy and standards;
2-3	Environmental Monitoring (gas, liquid, solids): Sampling and monitoring mechanisms, Design and types of samples, Pre-sampling requirements/information, sampling.
4-8	Pollution Control and Treatment Techniques: Air pollution control technologies, water pollution control technologies, water treatment technologies, sub-soil / soil pollution control technologies, noise pollution control technologies, cleaner production and zero emissions, Biotechnology for environment, industrial pollution control; covering design, sizing and operation.
	Climate Change: Global warming and climate change, Different Weathers, Earth's climate system, types and influencing Factors, Greenhouse effect, Energy use and carbon emissions, Effect and Importance of climate on environment, Impacts of climate changes on human life and environment, History and data analysis of climate changes, Controls of climate changes, UNO action plan of climate changes.
9-10	Mid Term Exams
11-16	Assessment Techniques: Principles and purposes of IEE and EIA and its significance for society, Main stages in EIA process. Public consultation and participation in EIA process. EIA methods and techniques for impact prediction and evaluation. Environmental standards.
17	Revision
18	End Semester Exam
TEXT AND REFERENCE BOOKS: Cheremisinoff Handbook of Air Pollution Prevention and Control, 2002	

