



DEPARTMENT OF MATHEMATICS AND SCIENCE
ORISSA SCHOOL OF MINING ENGINEERING, KEONJHAR

Website: www.osme.co.in, Email: osmemath.science@gmail.com

LESSON PLAN

1st year	Branches: MINING	Semester: 1st semester	Name of the faculty- Pradyumna Kumar Sahoo	
Subject: Environmental Science	Sub code: TH5	No of days /week class allotted: 04	Semester from Date: <u>11-09-2024 to 24-12-2024</u> No of weeks: 16	
Month	Week	periods	Theory topics	Remarks
September	1 st	3P	Ecosystem-Structure of ecosystem, Components of ecosystem, food chain and food web	
	2 nd	4P	Types of ecosystems, aquatic (Lotic and Lentic) and terrestrial ecosystem	
	3 rd	4P	Biogeochemical cycles (Carbon, Nitrogen, Sulphur, Phosphorous cycle)	
	4 th	1P	Global Warming- Definition Causes and effects, Greenhouse effect, ozone layer depletion.	
October	1 st	3P	Definition of pollution and pollutant, natural and man-made sources of air pollutant.	
Puja Holidays				
	2 nd	4P	Types of air pollutants, particulate pollutants Effects and control of air pollutants (Bag filter, Cyclone separator, Electrostatic Precipitator)	
	3 rd	4P	Gaseous Pollution control: Absorber, Catalytic converter, Effect of air	

			pollutant due to Refrigerants, I.C. Boilers	
	4 th	2P	Noise pollution: Sources, Measurements, Effects of noise pollution. Noise pollution (Regulation and Control Rules), 2000	
November	1 st	1P	Sources of water pollution, Types of water pollutants	
	2 nd	4P	Characteristics of water pollutants: Waste water treatment: Primary methods, secondary methods, tertiary methods	
	3 rd	3P	Causes, Effects, and Preventive measures of soil pollution. Soil pollution causes: Excessive use of fertilizers, pesticides and insecticides, irrigation, E-waste.	
	4 th	4P	Solar energy, flat plate collector and it's theory Importance of coating. Advanced collector. Solar pond. Solar water heater, Solar dryer and solar stills.	
	5 th	4P	Biomass. Wind energy. New energy resources.	
December	1 st	4P	Solid waste generation, Sources and characteristics of Municipal solid waste, E-waste, bio-medical waste. Metallic and non-metallic wastes.	
	2 nd	4P	Collection and disposal: MSW (3R principles, energy recovery), Air quality act 2004, Air pollution control act 1981, and water pollution control act 1996. Structure and role of central and state pollution control board.	
	3 rd	4P	Concept of carbon credit, carbon footprint. Environmental management in fabrication industry.	

			ISO14000: implementation in industries and benefits.	
--	--	--	--	--

Text Books: 1. Environmental Science (English) by Dr Subrat Roy.

2. S.C Sharma & M.P. Poonia, Environmental Studies, Khana Publishing House, New Delhi

Reference Books:

- 1. O.P. Gupta, Elements of Environmental Pollution Control, Khana Publishing House, New Delhi**
- 2. Rao, M.N. Rao, H.V.N, Air Pollution, Tata Mc-Graw Hill Publication, New Delhi, 1988**
- 3. Keshav Kant, Air Pollution & control, Khanna Publishing House, New Delhi (Edition 2018)**

Signature of the Faculty

Date: