

Lesson Plan 15CE347E Global Warming and Climate change

B.Tech Civil Engineering (Open Elective) VIth SEM 2016-17

Instructional Objectives

Instructional objectives no.	Instructional Objectives (IO)
1.	To know the basics, importance of global warming
2.	To know the concept of mitigation measures against global warming

Student's outcome

Student Outcome No.	Student Outcome (SO)											
a	an ability to apply knowledge of mathematics, science, and engineering											
c	an ability to design a system, component or process to meet desired needs with in realistic constraints such as economic ,environmental ,social ,political ,ethical ,health and safety , manufacturability and sustainability											
e	an ability to identify, formulate, and solve engineering problems											
Course designed by	Department of Civil Engineering											
1	Student outcome	a	b	c	d	e	f	g	h	i	j	k
		X		X		X						
2	Mapping of instructional objectives with student outcome	1 , 2		1 , 2		1 , 2						
3	Category											
4	Broad area											
5	Approval											

Lesson plan 2016-2017

S.No	Contents	No of Hours	IOs	SOs	Reference
UNIT I	EARTH'S CLIMATE SYSTEM				
1	Introduction to environment	1	1,2	a,c,e	1,2,3,4
2	Ozone, ozone layer and its functions	1	1,2	a,c,e	1,2,3,4
3	Ozone depletion and ozone hole	1	1,2	a,c,e	1,2,3,4
4	Vienna convention and Montreal protocol	1	1,2	a,c,e	1,2,3,4
5	Green house gases and green house effect	1	1,2	a,c,e	1,2,3,4

6	Hydrological cycle and Carbon cycle	1	1,2	a,c,e	1,2,3,4
7	Global warming and its impacts	1	1,2	a,c,e	1,2,3,4

UNIT II	ATMOSPHERE & ITS COMPONENTS				
8	Atmosphere and its layers	1	1,2	a,c,e	1,2,3,4
9	Characteristics of Atmosphere	1	1,2	a,c,e	1,2,3,4
10	Structure of Atmosphere	1	1,2	a,c,e	1,2,3,4
11	Composition of Atmosphere	1	1,2	a,c,e	1,2,3,4
12	Atmospheric stability	1	1,2	a,c,e	1,2,3,4
13	Temperature profile of the atmosphere	2	1,2	a,c,e	1,2,3,4
14	Temperature inversion and effects of inversion on pollution dispersion.	2	1,2	a,c,e	1,2,3,4
	CYCLE TEST -1	2			
UNIT III	IMPACTS OF CLIMATE CHANGE				
15	Causes of Climate change	1	1,2	a,c,e	1,2,3,4
16	Change of Temperature in the environment	1	1,2	a,c,e	1,2,3,4
17	Melting of ice and sea level rise	1	1,2	a,c,e	1,2,3,4
18	Impacts of Climate Change on various sectors	2	1,2	a,c,e	1,2,3,4
19	Projected impacts for different regions, uncertainties in the projected impacts and risk of irreversible changes	2	1,2	a,c,e	1,2,3,4
UNIT IV	OBSERVED CHANGES AND ITS CAUSES				
20	Climate change and Carbon credits	1	1,2	a,c,e	1,2,3,4
21	Clean Development Mechanism (CDM), CDM in India	1	1,2	a,c,e	1,2,3,4
22	Kyoto Protocol	1	1,2	a,c,e	1,2,3,4
23	Intergovernmental Panel on Climate Change (IPCC)	1	1,2	a,c,e	1,2,3,4
24	Climate Sensitivity	1	1,2	a,c,e	1,2,3,4
25	Montreal Protocol	1	1,2	a,c,e	1,2,3,4
26	United Nations Framework Convention on Climate Change (UNFCCC)	1	1,2	a,c,e	1,2,3,4
27	Global change in temperature and climate and changes within India	1	1,2	a,c,e	1,2,3,4
UNIT V	CLIMATE CHANGE AND MITIGATION MEASURES				
28	CDM and Carbon Trading	1	1,2	a,c,e	1,2,3,4
29	Clean Technology, biodiesel, compost, biodegradable plastics	1	1,2	a,c,e	1,2,3,4
30	Renewable energy usage as an alternative	1	1,2	a,c,e	1,2,3,4
31	Mitigation Technologies and Practices within India and around the world	1	1,2	a,c,e	1,2,3,4
32	Non-renewable energy supply to all sectors	1	1,2	a,c,e	1,2,3,4
33	Carbon sequestration	1	1,2	a,c,e	1,2,3,4
34	International and regional cooperation for waste disposal- biomedical wastes, hazardous wastes, e-wastes, industrial wastes, etc.,	1	1,2	a,c,e	1,2,3,4
	CYCLE TEST - 2	3			
	TOTAL HOURS	45			

References

1. Dash Sushil Kumar, "Climate Change – An Indian Perspective", Cambridge University Press India Private limited 2007.
2. Adaptation and mitigation of climate change-Scientific Technical Analysis. Cambridge University Press ,Cambridge,2006.
3. Atmospheric Science, J.M. Wallace and P.V. Hobbs, Elsevier / Academic Press 2006.
4. Jan C. van Dam, Impacts of "Climate Change and Climate Variability on Hydrological Regimes", Cambridge university press ,2003.

Faculty handling the courses

Sl. No.	Faculty name
1.	Mr.J.Rajprasad
2.	Dr.R.Nagalakshmi
3.	Ms.V.Mirunalini
4.	Ms.B.Indhu
5.	Mr.N.Lokeshwaran
6.	Mr.R.Vinothkumar