

Lesson Plan-CE1204 Water Pollution & its Management
Academic year 2015-16 (Semester
commencing in FEB 2016)

Instructional objectives

Instructional objectives no.	Instructional objectives
1	To know the basics, importance of Water Pollution
2	To study the various Effects of Water pollution
3	To learn the importance of methods of control of Water Pollution
4	To understand the various Water Pollution control Act

Student outcomes

Student outcome number	Student outcome
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 within 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

Mapping of Instructional Objectives (IOs) with Student Outcomes (SOs)
CE1204- Water Pollution & its Management

Instructional objectives		Student Outcomes			
		a	c	e	
1. To know the basics, importance of Water Pollution		X	X		
2. To study the various Effects of Water pollution		X	X	X	
3. To learn the importance of methods of control of Water Pollution		X	X	X	
4. To understand the various Water Pollution control Act		X	X	X	
CE1204	Water Pollution & its Management	Lecture Hours (L)	Tutorial Hours (T)	Practical Hours (P)	Credits (C)
		3	0	0	3
	Prerequisite Nil				

Lesson Plan – 2015-16

Revision: 0 Dated 24/02/2016

Lecture No	Topic	No. of Hours	Instructional objectives	Student outcome	Reference
1,2	Sources & Characteristics Of Water Pollution-Water pollution-Sources & types of water pollution.	2	1	a, c	1
3,4	Physical, Chemical & Biological –Effect of waterpollution.	2	1	a, c	1
5,6	Drinking water quality standards-WHO & BIS standards	2	1	a, c	1
7,8	Waste Water treatment –Primary, secondary, tertiary treatment – effluent coming from STP	2	1	a, c	1
9	Water Act- 1974 (Prevention & Control)-salient features.	1	1	a, c	1,5
Cycle Test 1		2			
10,11	Water Quality & Standards	2	2	a, c	1
12,13	Quality of surface waters, Water quality in flowing waters,	2	2	a, c	1,2

14,15	Water quality in impounded waters.	2	2	a, c	1,3
16, 17	Groundwater quality, Water quality standard.	2	2	a, c	1,3
18, 19	Microbiological quality of drinking water. Chemical quality of drinking water.	2	2	a, c	1,3
20 ,21	Industrial Activity & Mitigation Measures- Role of water in different industries-Effluent discharge characteristics.	2	2,3	a, c	1,3
22, 23	-Discharge Standards for Rivers and Streams-Role of stakeholders, Public NGO's.	2	2, 3	a, c	1,3
Cycle Test 2		2			
24,25	Government in Protection of Water bodies-Control Measures.	2	2, 3	a, c	1,3
26 ,27	Mitigation Measures for Industrial Water Contamination due to industries.	2	2, 3	a, c, e	1,3
28, 29	Water Pollution Regulations- Administrative regulation under recent legislations in water pollution control.	2	3, 4	a, c	1,3
30, 31	Water (Prevention & control of pollution) Act 1974 as amended by Amendment Act 1988.	2	3, 4	a, c	1,3
32, 33	Water (Prevention & control of pollution) Rules 1975- Water (Prevention & control of pollution) Cess Act. 1977 as amended by Amendment Act 1991.	2	3, 4	a, c	1,3,5
34	Role Of Regulatory Boards- Sustainable Development.	1	3, 4	a, c, e	1,2,5
35	Rain Water Harvesting-Methods.	1	3, 4	a, c, e	2
36	Water Pollution-Causes and Effects-	1	3, 4	a, c	1,2
37, 38	Role of Regulatory bodies and Local bodies-CPCB-TWAD Board – CMWSSB etc--Case Studies related to Effective Water Management.	2	3, 4	a, c, e	3,4,5
	Model Examination	3			
	Total Hours	45			

The faculty members handling the course may conduct surprise test according to their convenience.

Text Books & Reference books.

1. Fair.G.M, "Water and Waste water engineering Vol.I & II" .John Wiley and sons, Newyork. 2010.
2. Metcalf & Eddy, "Wastewater engineering, Treatment and Reuse", Tata MacGrawhill publications, 2008.
3. Eckenfelder, W.W., ""Industrial Water Pollution Control", McGraw-Hill, 2009.
4. Arceivala.S.J, "Wastewater Treatment for Pollution Control", Tata McGraw- Hill, 2008.
5. "Aruna Venkat Environmental Law and Policy", PHI learning private limited New Delhi, 2011.

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