



Department of Civil Engineering	LP: OE18408 Rev. No: 02
B.E/B.Tech/M.E/M.Tech : AUT/ADS/BIO/CHE/CSE/ECE/EEE/INT/MEC Regulation: 2018 PG Specialisation : N/A Sub. Code / Sub. Name : OE18408 / WATER POLLUTION AND ITS MANAGEMENT Unit : I - SOURCES & CHARACTERISTICS OF WATER POLLUTION	Date: 02/01/2024

Unit Syllabus: Water Pollution-Sources & types of water pollution –Physical, chemical & biological –Effect of water pollution. Drinking water quality standards waste Water treatment –Primary, secondary, tertiary-water pollution prevention & control act – 1974.

Objective: Enumerate the sources and characteristics of water pollution.

Session No *	Topics to be covered	Ref	Teaching Aids
1	Water pollution –Introduction	R1- Ch.1;Pg.5-7	PPT
2	Water pollution - Sources & types of water pollution	R1- Ch.1;Pg.5-7	PPT
3	Water pollution - Sources & types of water pollution	R1- Ch.1;Pg.5-7	PPT
4	Physical, chemical & biological characteristics of waste water	R1-Ch 15 :Pg 214-215	PPT
5	Physical, chemical & biological characteristics of waste water	R1-Ch 15 :Pg 214-215	PPT
6	Effect of water pollution. Drinking water quality standards and waste water treatment	R1- Ch.1;Pg. 8	PPT
7	Primary, secondary, tertiary treatments of waste water	R1-Ch 15 :Pg 222-230	PPT
8	Water pollution prevention & control act – 1974.	R2-Pg 1-30	PPT
9	Water pollution prevention & control act – 1974.	R2-Pg 1-30	PPT

Content beyond syllabus covered (if any):

Different laboratory tests to find the water quality



Sub. Code / Sub. Name: OE18408 / WATER POLLUTION AND ITS MANAGEMENT

Unit : II- WATER QUALITY AND STANDARDS

Unit Syllabus : Quality of surface waters, Water quality in flowing waters, Water quality in impounded waters, Groundwater quality, Water quality standard Microbiological quality of drinking water, and Chemical quality of drinking water.

Objective: To describe the water quality standards

Session No *	Topics to be covered	Ref	Teaching Aids
10	Quality of surface waters	R1- Ch.3;Pg. 31-33	PPT
11	Quality of surface waters	R1- Ch.3;Pg. 31-33	PPT
12	Water quality in flowing waters	R1- Ch.3;Pg. 28-31	PPT
13	Water quality in impounded waters,	R1- Ch.3;Pg. 28-31	PPT
14	Ground water quality	R1- Ch.3;Pg. 29	PPT
15	Ground water quality	R1- Ch.3;Pg. 29	PPT
	CAT – I		
16	Water quality standard Microbiological quality of drinking water	R1- Ch.3;Pg. 33-35	PPT
17	Chemical quality of drinking water.	R1- Ch.3;Pg. 35-37	PPT
18	Chemical quality of drinking water.	R1- Ch.3;Pg. 35-37	PPT

Content beyond syllabus covered (if any):

Water treatment plants in Chennai



Sub. Code / Sub. Name: OE18408 / WATER POLLUTION AND ITS MANAGEMENT

Unit : III - INDUSTRIAL ACTIVITY & MITIGATION MEASURES

Unit Syllabus: Role of water in different industries-Effluent discharge characteristics-Discharge Standards for Rivers and Streams-Role of stakeholders, Public NGOS, Government in Protection of Water bodies-Control Measures-Mitigation Measures for Industrial Water Contamination due to industries.

Objective: Summarise the industrial activity and mitigation measures

Session No *	Topics to be covered	Ref	Teaching Aids
19	Role of water in different industries	R3-Ch.1; Pg.39	PPT
20	Effluent discharge characteristics	R3-Ch.1; Pg.14	PPT
21	Discharge Standards for Rivers and Streams	R2-Ch.1; Pg.17	PPT
22	Role of stakeholders, Public NGOS in Protection of Water bodies	R5-Ch.1; Pg. 7	PPT
23	Role of stakeholders, Public NGOS in Protection of Water bodies	R5-Ch.1; Pg. 7	PPT
24	Government in Protection of Water bodies	R5-Ch.5; Pg. 65	PPT
25	Government in Protection of Water bodies	R5-Ch.1; Pg. 65	PPT
26	Mitigation measures for Industrial Water Contamination due to industries	R3-Ch.7; Pg.313-394	PPT
27	Mitigation measures for Industrial Water Contamination due to industries	R3-Ch.7; Pg.313-394	PPT

Content beyond syllabus covered (if any):

Effluent Standards of Sewage Treatment plants in India & its Recent Amendments given by National Green Tribunal, Ministry of Housing and Urban Affairs.



Sub. Code / Sub. Name: OE18408 / WATER POLLUTION AND ITS MANAGEMENT

Unit : IV – WATER POLLUTION REGULATIONS

Unit Syllabus: Administrative regulation under recent legislations in water pollution control. Water (Prevention & control of pollution) Act 1974 as amended by Amendment Act 1988. Water (Prevention & control of pollution) Rules 1975 Water (Prevention & control of pollution) Cess Act. 1977 as amended by Amendment Act 1991.

Objective: Summarise the water pollution regulations

Session No *	Topics to be covered	Ref	Teaching Aids
28	Administrative regulation under recent legislations in water pollution control	R2-Ch.1; Pg. 1-7& R6-Ch.1; Pg. 1-15	PPT
29	Administrative regulation under recent legislations in water pollution control	R2-Ch.1; Pg. 1-7& R6-Ch.1; Pg. 1-15	PPT
30	Water (Prevention & control of pollution) Act 1974 as amended by Amendment Act 1988	R2-Ch.1; Pg. 1-7	PPT
31	Water (Prevention & control of pollution) Act 1974 as amended by Amendment Act 1988	R2-Ch.1; Pg. 1-7	PPT
32	Water (Prevention & control of pollution) Act 1974 as amended by Amendment Act 1988	R2-Ch.1; Pg. 1-7	PPT
	CAT – II		
33	Water (Prevention & control of pollution) Rules 1975	R6-Ch.1; Pg. 1-15	PPT
34	Water (Prevention & control of pollution) Rules 1975	R6-Ch.1; Pg. 1-15	PPT
35	Water (Prevention & control of pollution) Cess Act. 1977 as amended by Amendment Act 1991	R7-Ch.1; Pg. 1-7	PPT
36	Water (Prevention & control of pollution) Cess Act. 1977 as amended by Amendment Act 1991	R6-Ch.1; Pg. 1-7	PPT

Content beyond syllabus covered (if any):



Sub. Code / Sub. Name: OE18408 / WATER POLLUTION AND ITS MANAGEMENT

Unit :V - ROLE OF REGULATORY BOARDS

Unit Syllabus: Sustainable Development, Rain Water Harvesting-Methods-Water Pollution-Causes and Effects-Role of Regulatory bodies and Local bodies-CPCB-TWAD Board – CMWSSB – Case studies related to Effective Water Management.

Objective: Describe the role of regulatory bodies

Session No *	Topics to be covered	Ref	Teaching Aids
37	Sustainable Development	R10-Pg.11.Pg.53-60	PPT
38	Rain Water Harvesting Methods	R8	PPT
39	Water Pollution-Causes and Effects	R1-Ch.1; Pg. 1-11	PPT
40	Water Pollution-Causes and Effects	R1-Ch.1; Pg. 1-11	PPT
41	Role of Regulatory bodies and Local bodies	R11& R13	PPT
42	CPCB-TWAD Board	R11& R12	PPT
43	CMWSSB	R13	PPT
44	Case studies related to Effective Water Management	R8-Ch.1; Pg. 313-326	PPT
45	Case studies related to Effective Water Management	R8-Ch.1; Pg. 371-384	PPT
	CAT III		

Content beyond syllabus covered (if any):



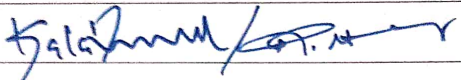
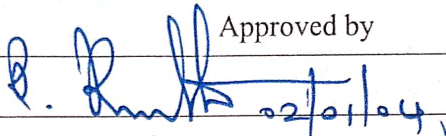
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TEXTBOOKS:

1. Fair.G.M, "Water and Waste water engineering Vol.I & II" .John Wiley and sons, New York. 2010.
2. P.C. Bansil, "Water Management In India,"Concept Publishing Company", New Delhi, 2004.
- 3.

REFERENCES:

1. Water Pollution Causes ,Effects and Control by P.K.Goel ,New Age International (P) limited Pubishers,2006
2. The Water (Prevention And Control Of Pollution) Cess Act, 1977 Central Pollution Control Board website (<https://cpcb.nic.in/water-pollution/>)
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. <https://cfpub.epa.gov/npstbx/files/stakeholderguide.pdf>
6. [https://cpcb.nic.in/uploads/GSR_58_\(E\)_1975.pdf](https://cpcb.nic.in/uploads/GSR_58_(E)_1975.pdf)
7. http://164.100.47.4/billtexts/lbills/asintroduced/143_1991_LS_Eng.pdf
8. https://www.who.int/water_sanitation_health/resourcesquality/wpcbegin.pdf
9. <https://www.twadboard.tn.gov.in/rain-water-harvesting-methods>
10. National Building code of India 2016 – Volume II
11. <https://cpcb.nic.in/water-pollution/>
12. <https://www.twadboard.tn.gov.in/policy-notes-documents>
13. <https://chennaietrowater.tn.gov.in/qualityassurance.html>

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