

GUJARAT TECHNOLOGICAL UNIVERSITY, AHMEDABAD, GUJARAT

COURSE CURRICULUM COURSE TITLE: ENVIRONMENTAL LEGISLATION AND AUDIT (COURSE CODE: 3361305)

Diploma Programme in which this course is offered	Semester in which offered
Environment Engineering	Sixth

1. RATIONALE

Environmental awareness is today's need as pollution impact is highly increasing. Environmental legislation and Audit is the mechanism to enforce environment friendly techniques/methods to business and industries. And hence knowledge of environmental legislation and audit is an essential requirement for environment engineers. The diploma pass outs must have basic knowledge of environmental laws in India and various acts and rules related to environment and implementing authorities and their functions. This course therefore aims to develop in students, knowledge of the legal concepts, procedures and techniques which have evolved. The course also provides knowledge of tools about the environmental audit.

2. COMPETENCY

The course content should be taught and curriculum should be implemented with the aim to develop required skills in the students so that they are able to acquire following competency:

- **Identify and explain implications of different types of Environmental law's and, debate their applicability in Industries.**

3. COURSE OUTCOMES (COs)

The theory should be taught and practical should be carried out in such a manner that students are able to acquire required learning outcomes in cognitive, psychomotor and affective domain to demonstrate following course outcomes:

- i. Interpret the Environment Protection (EP) Act 1986.
- ii. Interpret the Water Act 1974 and Water Cess Act
- iii. Interpret the Air Act 1981.
- iv. Interpret the Hazardous waste Act 1989
- v. Analyze the 'Environmental Audit' done of an Industry and debate the method used to do so.
- vi. Undertake Environmental Audit.

4. TEACHING AND EXAMINATION SCHEME

Teaching Scheme (In Hours)			Total Credits (L+P+T)	Examination Scheme				
				Theory Marks		Practical Marks		Total Marks
L	T	P	C	ESE	PA	ESE	PA	
3	0	0	3	70	30	00	00	100

Legends: L-Lecture ; T-Tutorial /Teacher Guided Student Activity ; P-Practical ; C-Credit ; ESE-End Semester Examination ; PA –Progressive Assessment

5. COURSE CONTENT DETAILS

Unit	Major Learning Outcomes (In Cognitive Domain)	Topics and Sub-topics
Unit-I Constitutional Perspectives and Environmental Protection Act, 1986	1a. Discuss the key features of Environmental Laws/acts and the legal obligations of citizens with regard to environmental matters 1b. Explain the origins and sources of EP act 1c. Describe various sections of EP act	1.1 Historical perspective of environmental protection. 1.2 Constitutional guarantees to environmental protection. 1.3 National and International environmental policies. 1.4 Sections and clauses of Environment (Protection) act , 1986.
Unit-II Water Act 1974 and Water Cess Act	2a. Explain the origins and sources of Water act and water cess act 2b. Discuss various sections of Water act and water cess act with its implications.	2.1 Sections and clauses of Water act , 1974. 2.2 Clauses of water cess act with their shortcomings.
Unit-III Air Act , 1981	3a. Explain the origins and sources of Air act 3b. Interpret the various sections of Air act 1981	3.1 Sections and clauses of Air (Prevention and control) act, 1981.
Unit-IV Hazardous Waste Act 1989	4a. Explain the nature and sources of the Hazardous Wastes Rules, its administration 4b. Interpret the Provisions of Hazardous waste rules, 1989.	4.1 Provisions of Hazardous waste rules, 1989 for management and handling of hazardous waste.
Unit-V Environmental Regulation and Audit	5a. Describe various sections of coastal regulation act, Biomedical Wastes (Management and Handling) rules, Municipal Solid Waste Rules, Plastic Manufacturing Sale and Usage Rules. 5b. Discuss the methods for environmental Audit. 5c. Analyze case studies related to the Environmental Audit for solving environmental related problems.	5.1 Provisions of: Coastal regulation act, Biomedical Wastes (Management and Handling), Municipal Solid Waste Rules , Plastic Manufacturing Sale and Usage Rules, 5.2 Explain methodology of – Pre audit activities , onsite activities , post audit activities 5.3 Environmental audit, Audit Procedures, Pre audit activities, On site activities, post audit activities 5.4 Case studies related with environmental audit.

6. SUGGESTED SPECIFICATION TABLE WITH HOURS and MARKS (THEORY)

Unit	Unit Title	Teaching Hours	Distribution of Theory Marks			
			R Level	U Level	A Level	Total Marks
I	Constitutional Perspectives and Environmental Protection Act, 1986	08	04	06	02	12
II	Water Act, 1974 and Water Cess Act	06	02	06	02	10
III	Air Act 1981	06	02	04	04	10
IV	Hazardous Waste Rules	06	02	04	04	10
V	Environmental Regulation and Audit	16	08	12	08	28
Total		42	18	32	20	70

Legends: R = Remember, U = Understand, A= Apply and above Level (Bloom's revised taxonomy)

Note: This specification table shall be treated as a general guideline for students and teachers. The actual distribution of marks in the question paper may vary slightly from above table.

7. SUGGESTED EXERCISES/PRACTICALS

Not applicable

8. SUGGESTED STUDENT ACTIVITIES (classroom/laboratory/Assignment)

- i. Role play and case study on implementation of Environmental Protection laws , environmental Audit report
- ii. Solving environment protection related problems using different types of case studies having bearing of different acts.

9. SPECIAL INSTRUCTIONAL STRATEGIES (if Any)

- i. Ask students to visit industries in nearby locations and discuss with them the different environment acts/laws being taken care by them and prepare a report.
- ii. Arrange Expert lectures of some advocate/consultant having expertise on environmental acts/laws and audit procedures.

10. SUGGESTED LEARNING RESOURCES**(A) Books**

S. No.	Title of Books	Author	Publication
1	Handbook of Environmental Laws, Guidelines, Compliance and Standards, Vol. 1 and 2	Trivedim R. K.	Media karad, India
2	Environmental Law and policy in India	Armin Rozencaranz, Shyam Divan and Martha L.Noble	Tripathi Publication
3	Environmental Auditing	-	CPCB Publication
4	Related I.S. code		

(B) Software/Learning Websites

- i. www.gpcb.gov.in
- ii. www.cpcb.nic.in
- iii. www.nptel.ac.in

11. COURSE CURRICULUM DEVELOPMENT COMMITTEE**Faculty Members from Polytechnics**

- **Prof .M.C. Sanandiya**, Lecturer in Environmental Engineering, K. J.Polytechnic, Bharuch
- **Prof .Jini Sunil**, Lecturer in Environmental Engineering, K. J.Polytechnic, Bharuch

Coordinator and Faculty Members from NITTTR Bhopal

- **Prof. M.C. Paliwal** , Associated Professor, Department of Civil and Environment Engineering
- **Dr V. H. Radhakrishnan**, Professor, Department of Civil and Environment Engineering,