

GUJARAT TECHNOLOGICAL UNIVERSITY

ENVIRONMENTAL ENGINEERING (13) ENVIRONMENTAL LEGISLATION AND AUDIT SUBJECT CODE: 2181304 B.E.: 8TH SEMESTER

Type of course: --

Prerequisite: Knowledge of Environmental Studies

Rationale: Knowledge of existing regulations of the country regarding environmental protection is necessary for practicing environmental engineers. Hence the purpose of this subject is to impart the students the knowledge of existing environmental regulations , application of which will be required in their professional life.

Teaching and Examination Scheme:

Teaching Scheme			Credits C	Examination Marks						Total Marks
L	T	P		Theory Marks			Practical Marks			
			ESE (E)	PA (M)		ESE (V)		PA (I)		
				PA	ALA	ESE	OEP			
3	2	0	5	70	20	10	30	0	20	150

Content:

Sr. No.	Content	Total Hrs	% Weightage
	[A] Environmental Legislation:		
1	Historical perspective; constitutional perspective; guarantees to Environmental protection , Common law	2	4
2	Water (Prevention and Control of Pollution) Act; 1974: Familiarization with important sections and clauses of Act; Lacunae.	4	8
3	Air (Prevention and Control of Pollution) Act1981 Familiarization with important section and clauses of Act; Lacunae.	4	8
4	Environmental Protection Act; 1986 Improvement over previous acts; limitations; Important Sections;	4	8
5	Water Cess Act; 1977 Familiarization with important sections and clauses of the act with their lacuna.	2	4
6	Latest Notifications under EPA ; 1986: <ul style="list-style-type: none"> • The Hazardous Waste (Management and Handling) Rules; 1989; 2002 and amendments • The Biomedical Waste (Management and Handling) Rules; 1998 and amendments. • The Recycled Plastics Manufacturing and Usage Rules; 1999 & its amendments. • The Noise Pollution (Regulation and Control) Rules 2000 and 	14	30

	amendments. <ul style="list-style-type: none"> • The Public Liability Insurance Act; 1991 and amendments. • Coastal Regulation Zone and amendments. • E waste management rules 2016 		
7	Introduction to ISO 14000.	2	4
	[B] Environmental Audit:		
1.	Philosophy of Environmental audit; definitions; benefits; objectives; Audit procedures: Pre audit activities; activities of site and post audit activities; case studies.	6	13
2.	Environmental Audit Scheme as implemented by GPCB under the instructions of Hon. Gujarat High Court.	4	8
3.	Case Studies	6	13

Suggested Specification table with Marks (Theory):

Distribution of Theory Marks					
R Level	U Level	A Level	N Level	E Level	C Level
25	25	25	10	15	0

Legends: R: Remembrance; U: Understanding; A: Application, N: Analyze and E: Evaluate and above Levels (Revised Bloom's 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.

Reference Books:

1. Constitution of India
2. Water (Prevention and Control of Pollution) Act 1974 and its amendments 1978; 1988.
3. Air (Prevention and Control of Pollution) Act 1981; 1987 and its amendments
4. Water Cess Act; 1977; 1992
5. Environmental Protection Act; 1986 & its amendments
6. Environmental Law and Policy in India by Armin Rozencaranz; Shyam Divan and Marhta L. Noble; Tripathi Publications ISO 14000.
7. Environmental Auditing – CPCB Publication

Course Outcome:

After learning the course the students should be able to:

1. Display the knowledge of constitutional provisions with respect to environmental protection.
2. Support the industries in achieving compliance with environmental laws and regulation.
3. Support the industries in obtaining the clearance for starting new project.
4. Apply the Knowledge of ISO 14000 for obtaining certification.
5. Carry out environmental audit of the industries as per the requirement of current environmental laws.

List of tutorials:

1. Assignments related to provisions under Water (Prevention and Control of Pollution) Act 1974
2. Assignments related to provisions under Air (Prevention and Control of Pollution) Act
3. Assignments related to provisions under Environmental Protection Act; 1986
4. Assignments related to provisions under Water Cess Act; 1977
5. Assignments related to provisions under The Hazardous Waste (Management and Handling) Rules
6. Assignments related to provisions under The Biomedical Waste(Management and Handling) Rules
7. Assignments related to provisions under The Recycled Plastics Manufacturing and Usage Rules
8. Assignments related to provisions under The Public Liability Insurance Act;
9. Assignments related to provisions under Coastal Regulation Zone
10. Questions based on ISO 14000.
11. Questions based on Environmental Audit.
12. Case studies on Environmental Audit

List of Open Source Software/learning website:

1. **Website of GPCB, MoEF & CPCB.**

ACTIVE LEARNING ASSIGNMENTS: Preparation of power-point slides, which include videos, animations, pictures, graphics for better understanding theory and practical work – The faculty will allocate chapters/ parts of chapters to groups of students so that the entire syllabus to be covered. The power-point slides should be put up on the web-site of the College/ Institute, along with the names of the students of the group, the name of the faculty, Department and College on the first slide. The best three works should submit to GTU.