



# GUJARAT TECHNOLOGICAL UNIVERSITY

**Bachelor of Engineering**

**Subject Code: 3161311**

**Semester – VI**

**Subject Name: PREVENTIVE ENVIRONMENTAL MANAGEMENT**

**Type of course:** Professional Elective Course

**Prerequisite:** Knowledge of environmental laws and policies

**Rationale:** Knowledge of preventive practices is essential to avoid the treatment and curative strategies.

### 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)	
3	1	0	4	70	30	0	0	100

### Content:

Sr. No.	Content	Total Hrs
1	<b>Introduction:</b> a. Historical perspective b. Constitutional perspective c. International protocols/principles d. Law making process e. Common Environmental Law	08
2	<b>Preventive Environmental Management Tools:</b> • Environmental Audit • Environmental Impact Assessment • Life Cycle Analysis • Inventorization and Environmental Management system	12
3	<b>Preventive Environmental Management Initiatives:</b> • Cleaner Production • Green chemistry and cleaner technologies • Green choices in process Industries • Redesigning of unit operations and unit processes • Recycle and Reuse of waste water • Eco-industrial network • CDM as preventive Environmental management initiative	15
4	<b>Relationship between industry and environment</b>	07

### Suggested Specification table with Marks (Theory):

Distribution of Theory Marks					
R Level	U Level	A Level	N Level	E Level	C Level
10	15	20	10	10	5

Legends: R: Remembrance; U: Understanding; A: Application, N: Analyze and E: Evaluate C: Create 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:



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1. Preventive Environmental Management: An Indian Perspective by Dr. Shyam R. Asolekar & Dr. R. Gopichandran
2. Cleaner Production Strategies : Developing preventive Environmental Management by Tim Jackson published by Lewis publishers
3. Practical guide to Environmental Management 9th edition by Frank B Friedman

### Course Outcomes:

Sr. No.	CO statement	Marks Weightage
CO1	Describe environmental policy of India and current environmental laws.	20
CO2	Identify the different preventive tools like environmental audit, EIA and Life Cycle Assessment.	30
CO3	Carry out preventive environmental initiatives like Cleaner production, Green chemistry, Recycle and reuse of wastewater.	35
CO4	Identify and integrate relationship between industry and environment	15

### Tutorials:

1. Assignments on the questions related to Current environmental laws, Indian Environmental policy, Environmental audit, EIA, Life Cycle Analysis, Cleaner Production, Recycle and reuse of wastewater.
2. Case studies on the Environmental Management Issues.