

GUJARAT TECHNOLOGICAL UNIVERSITY

ENVIRONMENTAL ENGINEERING (13) PREVENTIVE ENVIRONMENTAL MANAGEMENT SUBJECT CODE: 2181305 B.E. 8th SEMESTER

Type of course: Applied Science and management

Prerequisite: Knowledge of subject 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)		
				PA	ALA	ESE	OEP			
3	2	0	5	70	20	10	30	0	20	150

Content:

Sr. No.	Content	Total Hrs	% Weightage
1	Introduction: <ul style="list-style-type: none">The environment in the context of 21st centuryPresent status of India's Environment	2	4
2	Indian Environmental Policy : <ul style="list-style-type: none">Frame work and ImplementationCurrent environmental laws in India	8	17
3	Preventive Environmental Management Tools: <ul style="list-style-type: none">Environmental AuditEnvironmental Impact AssessmentLife Cycle AnalysisInventorization and Environmental Management system	14	29
4	Preventive Environmental Management Initiatives: <ul style="list-style-type: none">Cleaner ProductionGreen chemistry and cleaner technologiesGreen choices in process IndustriesRedesigning of unit operations and unit processesRecycle and Reuse of waste waterEco-industrial networkCDM as preventive Environmental management initiative	22	46
5	Relationship between industry and environment	2	4

Suggested Specification table with Marks (Theory):

Distribution of Theory Marks					
R Level	U Level	A Level	N Level	E Level	C Level
20	25	25	20	10	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. 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 Outcome:

After learning the course the students should be able to:

1. Gain knowledge of environmental policy of India and current environmental laws.
2. Understand and apply the different preventive tools like environmental audit, EIA and Life Cycle Assessment.
3. Undertake and implement preventive environmental initiatives like Cleaner production, Green chemistry, Recycle and reuse of wastewater.

List of 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

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.