GUJARAT TECHNOLOGICAL UNIVERSITY

Bachelor of Engineering
Subject Code: 3143510
Semester – IV
Subject Name: Environmental Management-II

Type of course: Professional Core Course
Prerequisite: A good fundamental backup of Environmental Management

Rationale: The main objective of this subject is to make students aware about Environmental Management including Risk Management.

Teaching and Examination Scheme:

Teaching Scheme			Credits	Examination Marks				Total Marks
				Theory Marks		Practical Marks		
L	T	P	C	ESE (E)	PA (M)	ESE (V)	PA (I)	
3	1	0	4	70	30	0	0	100

Content:

Sr. No.	Content	Total Hrs
1	**Fundamentals of GIS and RS:** Remote Sensing, Image Interpretation & Analysis, Photogrammetry Geoinformatics, Recent trends in RS and Environmental assessment & monitoring. GIS Definitions and Terminology, GIS categories, Levels/scales of Measurement, spatial data modelling, GIS data management, GIS in EIA (Topography Sheet).	8
2	**Radioactive Pollution:** Introduction, Radiation fundamentals, Measurement, Types of radiation, Sources of radioactive Pollution, Effects of Radioactive Pollution and Control of Radioactive Pollution and Disposal of Radioactive Waste, Case Study.	8
3	**Life Cycle Assessment and Risk Management** Life Cycle Assessment: Life Cycle Analysis, The Ongoing need for cleaner Technology, Cleaner Technology, Practical use of LCA in Environmental Labelling, Risk Assessment: Understanding Hazard and Risk, Emergency Response Plan, Evaluation of Risks.	10

4	**Environmental Management:** CEPI, Categories of Industries**,** Institutional Framework of Environmental Regulations in India**,** ENVIS Centers of India, Environmental Policy, Pollution Taxes, Zero Risk and Zero Discharge.	**8**

Suggested Specification table with Marks (Theory):

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

1. Environmental Management by S.K. Agarwal
2. Environmental Engineering and Management by Dr. Suresh K. Dhameja
3. Environmental Engineering by Gerard Kiely
4. Fundamental Geographic Information Systems-Demers 1995 edition
5. Textbook of Remote Sensing and GIS, M. Anji Reddy, B.S. Publications.

Course Outcomes:

Sr. No.	CO statement	Marks % weightage
CO-1	To list the various applications of GIS.	29
CO-2	To describe the fundamentals of radiations	29
CO-3	To apply the use of life cycle assessment	14
CO-4	To determine the waste management techniques.	14
CO-5	To explain Environmental Management systems.	7
CO-6	To prepare Risk Assessment	7